UFM®-SDN Appliance Hardware User Manual

P/N: MUA9002F-2SF-250, MUA9002F-2SF-500, MUA9002F-2SF-1K, MUA9002F-2SF-2K, MUA9002F-2SF-4K, MUA9002F-2SF-HA

Rev 1.5

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Revision History

Table 1 - Revision History Table

Date	Revision	Description
August 2013	1.5	Added Regulatory label in Traditional Chinese Changed Input parameters
July 2013	1.4	Added Safety Warnings in traditional Chinese See Section Appendix H:
May 2013	1.3	Reformatted TroubleShooting Section 5.
April 2013	1.2	Added figure #26 Added warning not to remove a good HDD See Section 4.7 renamed figure 1 and figure 2
March 2013	1.1	Added HW connection information to sections 3.1, 3.2, 3.3, 3.4, and 3.5 Added figure 15 “Connecting up the UFM-SDN Appliance” on page 21 Corrected interfaces on page 18 Added Notes regarding Static IP when No DHCP is available improved explanation of notification of faulty HDD.
February 2013	1.0	Initial Release

About this Manual

This manual describes the installation and basic use of the UFM®-SDN Appliance (Unified Fabric Manager for Software Defined Networks Appliance).

Intended Audience

This manual is intended for software and hardware engineers, users and system administrators responsible for fabrics management.

The manual assumes familiarity with the InfiniBand® Architecture Specification and with the Ethernet specification.

Related Documentation

Additional Documentation available from Mellanox:

Table 2 - Reference Documents and Web Sites

Document Name	Description
InfiniBand Architecture Specification, Vol. 1, Release 1.2.1	The InfiniBand Architecture Specification that is provided by IBTA
UFM®-SDN Appliance Remote Mgmt	This document contains information regarding Mellanox Technologies' remote management for the UFM®-SDN Appliance. This requires a customer support login.
UFM®-SDN Appliance Hardware Release Notes	This document contains information regarding hardware issues. This requires a customer support login.
UFM®-SDN Appliance Software Release Notes	This document contains information regarding software issues. This requires a customer support login.
UFM®-SDN Appliance Software User Manual	This document contains information regarding configuring and managing Mellanox Technologies' UFM®-SDN Appliance platforms. This requires a customer support login.
UFM®-SDN Appliance CLI Reference	Command Reference Guide for the UFM®-SDN Appliance listing all of the commands available through UFM® with explanations and examples. This requires a customer support login.

All of these documents can be found on the Mellanox Website. They are available either through the product pages or through the support page with a login and password.

Conventions

Throughout this manual, the name and the terms UFM-SDN Appliance and appliance are used to describe the UFM-SDN appliance, unless explicitly indicated otherwise.

The following icons are used throughout this document to indicate information that is important to the user.

This icon makes recommendations to the user.

This icon indicates information that is helpful to the user.

This icon indicates a situation that can potentially cause damage to hardware or software.

BEWARE! This icon indicates a situation that can potentially cause personal injury or damage to hardware or software.

Abbreviations

Table 3 - Abbreviations

Term	Description
FDR	Fourteen Data Rate

Mellanox Product Legend

The following table identifies the components of the appliance as they correspond to the OPN MUA9002F-2SF-250.

Place	Field	Decoder
M		Mellanox Technologies
UA	System Type	UFM-SDN Appliance
9	Data Transfer Protocol	9 = VPI
00	Size of box	00 = 1U
2	Number of HCA ports	2 = 2 QSFP ports
F	Type of HCA cards	CX354A ConnectX-3 dual port FDR
-	Separator	
2	# Power Supplies	0=0, 1=1, 2=2....
S	Depth of the Unit	S = standard depth, B = short depth
F	Air Flow direction	R= Back (power-supplies) side to front (hard-drives) side F= Front (hard-drives) side to back (power-supplies) side
-	Separator	
250	# of managed nodes	250 = 250 managed nodes 500 = 500 managed nodes 1K = 1000 managed nodes 2K = 2000 managed nodes 4K= 4000 managed nodes HA = High Availability

1 Overview

Mellanox's Unified Fabric Manager (UFM®) is a powerful platform for managing scale-out computing environments. UFM® enables data center operators to efficiently monitor and operate the entire fabric, and maximize fabric resource utilization.

UFM® eliminates the complexity of fabric management, provides deep visibility into fabric traffic and health, and optimizes application performance.

While other tools are device-oriented and involve manual processes, UFM®'s automated and application-centric approach bridges the gap between servers, applications and fabric elements, thus enabling administrators to manage and optimize from the smallest to the largest and most performance-demanding clusters.

UFM®-SDN Appliance is offered as a pre-installed network device, fitting all O/S environments. It is powered by a Mellanox ConnectX-3 FDR 2 port adapter card, to be plugged in any Mellanox fabric with minimal effort.

1.1 Serial Number and ID Information

The Serial number and MAC for the appliance are found on the pull out tab on the top left side of the front of the appliance. The MAC address of the first management interface (eth0) can be found on the pull-tab. eth1-3 have the next consecutive addresses.

Figure 1: Pull Out Tab Location on Appliance

Figure 2: Pull Out Tab Example

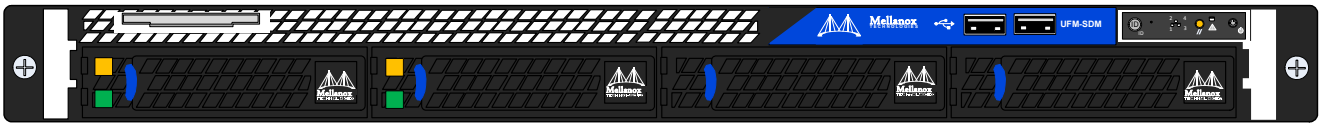
2 Basic Operation and Installation

2.1 UFM-SDN® Appliance Hardware Overview

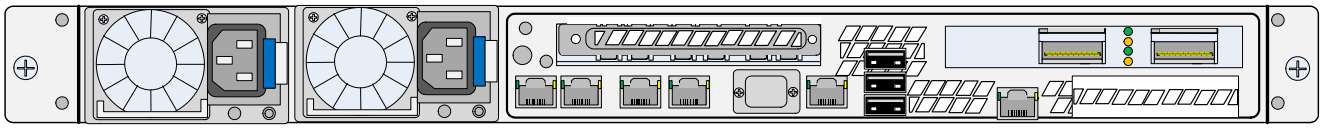
Figure 3 shows the power side panel and connector side panel views of the appliance. The figure shows interfaces, the hot-swap power supply location, hot swap HDD drawers, 6 – RJ-45 connectors, 5 – USB connectors, and various status LEDs.

Figure 3: UFM-SDN Appliance Front and Rear Side Panels

Front side



Rear side



2.1.1 Status LEDs

The System Status Indicators are located on the front side panel.

Figure 4: System Status Indicators

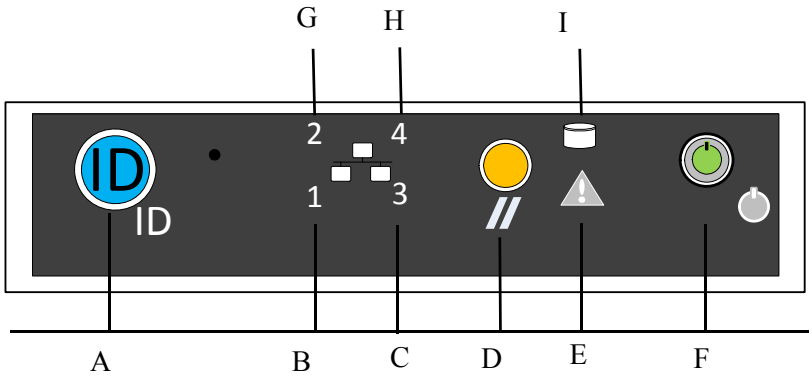


Table 4 - Figure 4 Legend

Label	Description	Label	Description
A	System ID Button w/Integrated LED	F	Power Button w/Integrated LED
B	NIC-1 Activity LED	G	NIC-2 Activity LED
C	NIC-3 Activity LED	H	NIC-4 Activity LED
D	System Cold Reset Button	I	Hard Drive Activity LED
E	System Status LED		

2.1.1.1 Appliance Status LED

This is a two color LED Green/ Amber . There are two matching Activity LEDs, one on each side of the appliance.

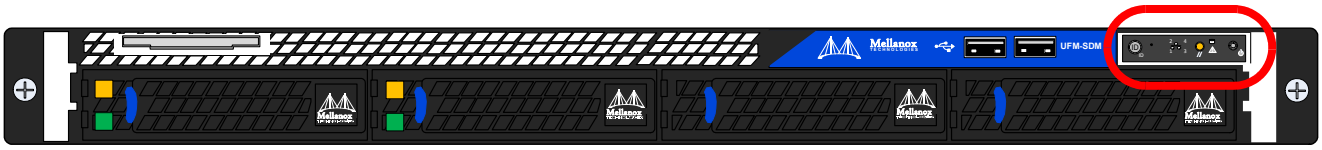
Table 5 - Appliance Status LED Configurations

LED Color	Status
LED Off	Off – There is no power to the appliance
Solid Green	OK – The appliance is running normally
Green Blinking at a rate of 1Hz	Non-critical error – The appliance is running but in a reduced state. Needs attention.
Amber Blinking at a rate of 1Hz	Warning – Impending critical state. Need to attend to this problem before it becomes fatal.
Amber	Fatal Error occurred – non recoverable condition system stopped!

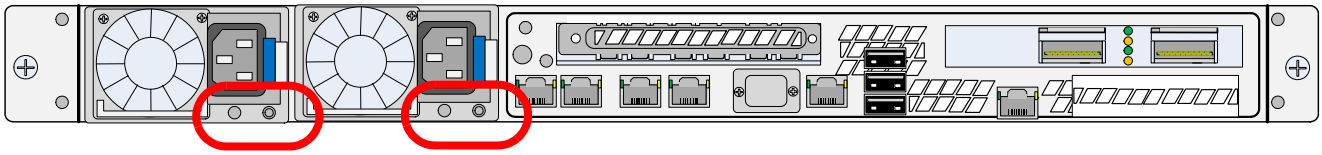
2.1.1.2 Power LEDs

Figure 5: UFM-SDN® Appliance Front and Rear Side Panels

Front side

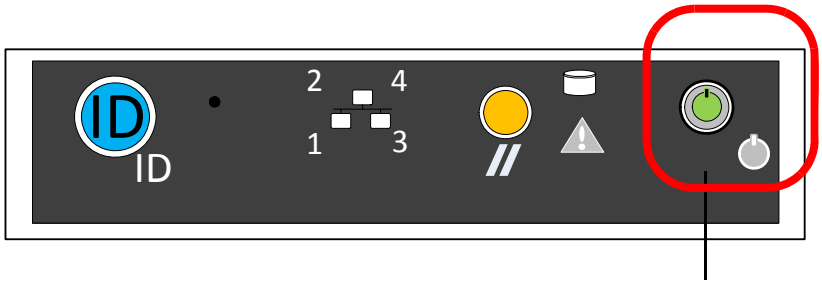


Rear side



Power supply Module #1 Power supply Module #2

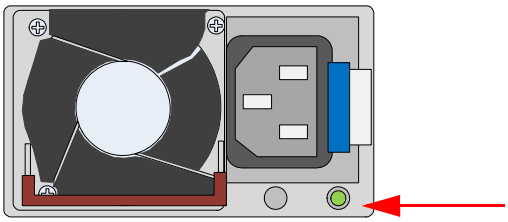
Figure 6: System Power and On/Off Button and Indicator



Power Button w/Integrated LED

The primary power supply unit (PS1) is located on the left side of the power side panel, with PS2 on the right of the PS1.

Figure 7: Power Supply Unit Status LEDs



Each PS unit has a single 2 color LED on the right side of the PS unit, that indicates the internal status of the unit.

Figure 6 shows the On/Off switch which contains an integral LED to show the power status of the appliance.

Table 6 - Power Supply Unit Status LED Configurations

LED Color	Status
Solid Green	OK – The Power supply is delivering the correct voltage
LED Off	Off – There is no power to any of the PS units
Green Blinking at a rate of 1Hz	PS off or in cold redundant state
Green Blinking at a rate of 2Hz	Firmware updating on the PS
Amber Blinking at a rate of 1Hz	Warning, PS continues to run Need to attend to this problem before it becomes fatal.
Amber	Power supply critical will result in a shutdown or failure Need to attend to this problem before it becomes fatal.

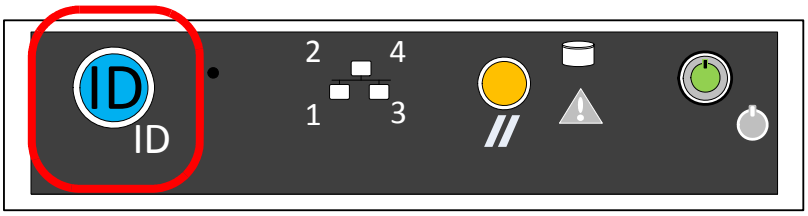
Each power supply has 1 fan built-in.

2.1.1.3 Appliance Identifier ID LED and Button

This appliance has a combination button and ID LED

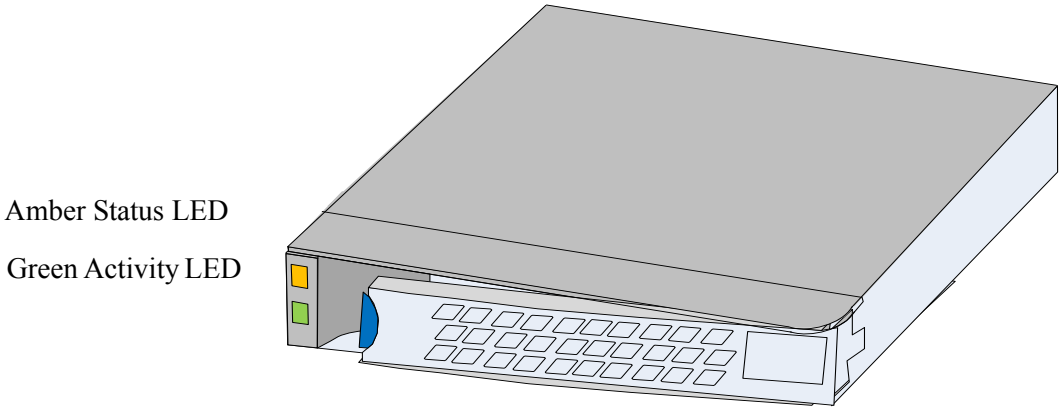
. The LED can be lit by pushing the button or by using the remote management.

Figure 8: Identification LED and Identifier Button



2.1.1.4 3.5 Inch Hard Drive LEDs

Figure 9: Hard drive LEDs



Status LED	Off	No access and no fault
	Solid On	Hard drive fault has occurred
	Blinking	Raid is rebuilding (this happens after replacing a faulty drive)

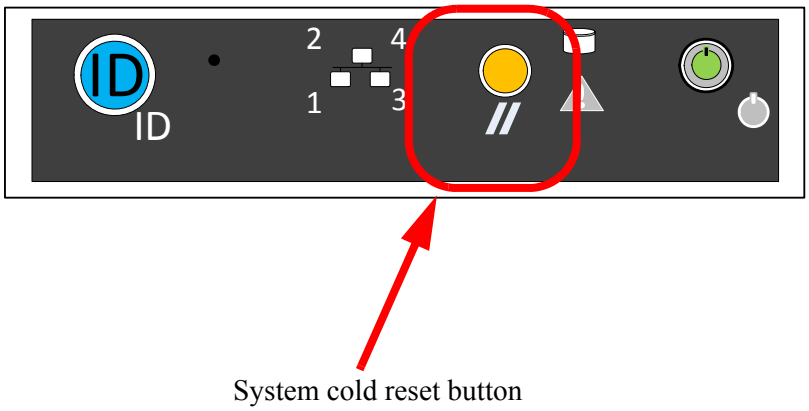
Activity LED	Off	Power on and Drive spun down
	Solid On	Power on with no drive activity
	Blinking	Power on with drive activity or drive spinning up

2.1.1.5 Hard Drive Activity LED

This LED indicates activity of the on-board hard disk controllers . When lit it indicates activity of the on-board hard disk controllers.

2.1.2 Reset Button

Figure 10: Cold Reset Button



This appliance has a system cold reset button. Pressing this button performs a forced reset of the appliance hardware. In general, for a graceful shutdown of the system (stopping all services, closing all files, flushing all caches etc.) use the CLI.

2.1.3 NIC Activity LED Indicators

The number LEDs display NIC activity.

Figure 11: NIC Activity LEDs

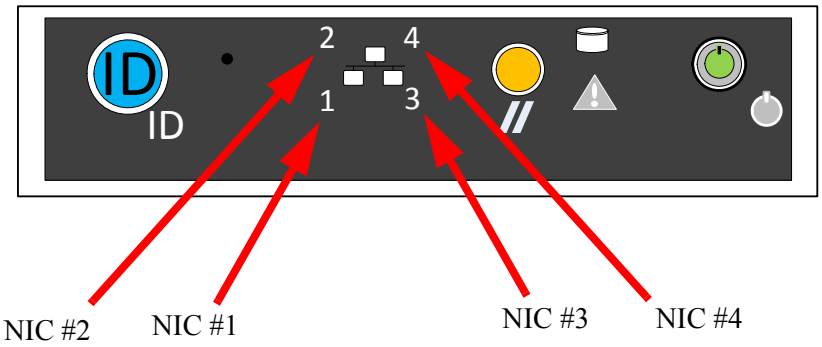


Table 7 - NIC Activity Indications

LED Configuration	LED Description
Off	Physical link down / Default
Solid Green	Physical link up no traffic
Flashing Green	Physical link up with traffic
Flashing Orange	Physical errors

2.2 Air Flow

This appliance comes with one air flow pattern. That is front (hard-drives) side to back (power-supplies) side.

3 Interfaces

The following are the interfaces to the appliance:

- One on/off button with integral LED
- 1 RJ-45 serial port
- 4 X 100M/1Gb Ethernet connectors
- 2 FDR Ports
- 1 remote management port
- 5 USB ports that is labeled
- System cold reset

Figure 12: Front side Interfaces

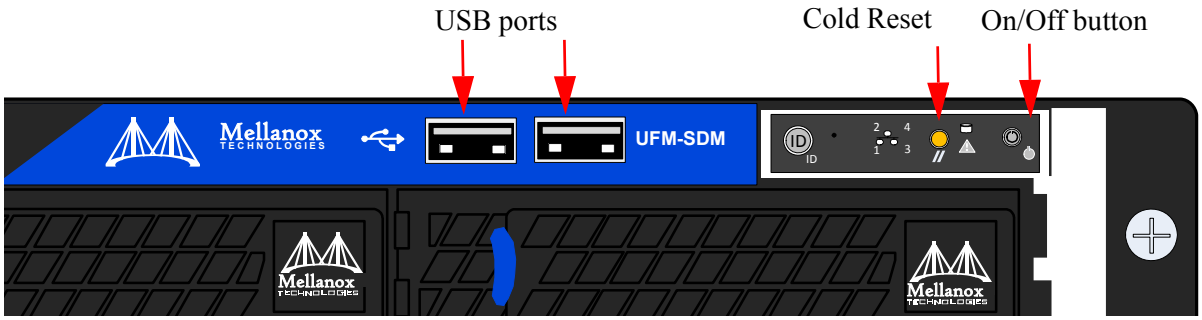
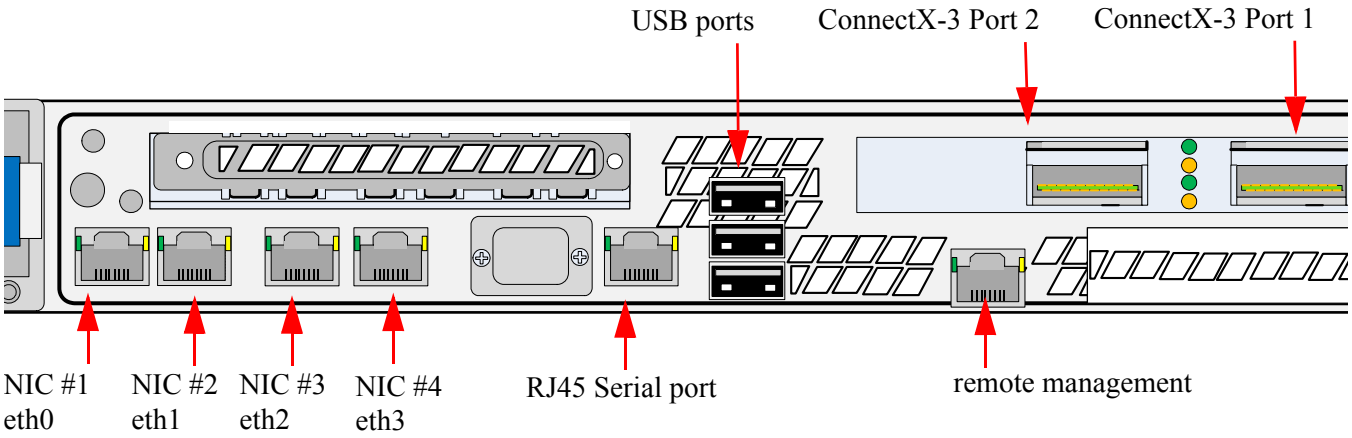


Figure 13: Rear Side Interfaces



3.1 On/Off Button

This switch is found on the front side of the appliance. See Figure 6. This button can turn the appliance on and off. In general, for a graceful shutdown of the system use the CLI. To do a forced shut down of the appliance, press and hold the button down until the appliance turns off. The led within the button displays the power on status.

3.2 RJ-45 Serial Port

This RJ-45 port is found on the rear side of the appliance. See Figure 13. This is a serial console RS-232 connector. This interface can be connected directly to a laptop via USB-to-serial cable for first-time configuration or to a Serial-to-Ethernet device. It should be configured to 9600 bps similar to switches.

3.3 RJ-45 Management Ports eth0- eth3

These 4 RJ-45 ports are found on the rear side of the appliance. See Figure 13. The eth0 and remote management interfaces are pre-configured as DHCP and the initial host name is ufm-appliance-[MAC ADDRESS] (MAC appears on a sticker on the pull-tab), so their IP addresses can be obtained from the DHCP server. In case no DHCP server is available, you have to use a serial cable to connect and configure eth0 and remote-management IP addresses with a static IP address.

Configuring the appliance via the serial port is required only in the case where out-of-the-box DHCP configuration for eth0 cannot be used. (There is no DHCP server in the management network). The user is then required to use the serial port to configure a static IP on eth0.

NIC#1 Ethernet connector gets connected to Ethernet switches. This switch must be configured to 100M/1G auto-negotiation.

3.4 ConnectX®-3 QSFP Ports

These 2 QSFP ports are found on the rear side of the appliance. See Figure 13. They should be connected to an IB switch in the fabric, it is recommended to connect to two different switches for redundancy. The appliance can be connected only to a single IB fabric.

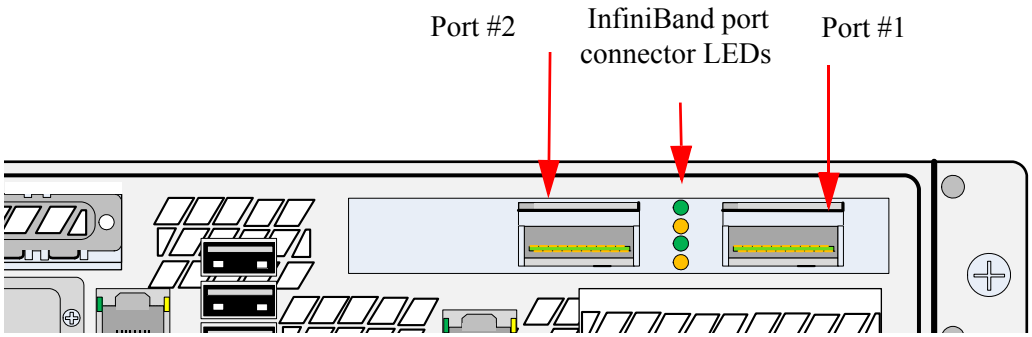
3.4.1 QSFP Port Interfaces

There are two I/O LEDs per port in dual-port designs. See Table 8 for LED functionality in InfiniBand mode.

Table 8 - Physical and Logical Link Indication

LED	Function
Green - Physical link	• Constant on indicates a good physical link • Blinking indicates a problem with the physical link • If neither LED is lit, then the physical link has not been established
Yellow -Logical (data activity) link	• A constant yellow indicates a valid logical (data activity) link without data transfer. • A blinking yellow indicates a valid logical link with data transfer • If only the green LED is lit and the yellow LED is off, then the logical link has not been established

Figure 14: InfiniBand Port Connector Interfaces



3.5 RJ-45 Ethernet Connector for Remote Management

The appliance has multiple Ethernet management interfaces. The primary management interface is eth0. An additional interface exists, for connecting to a remote management controller (It usually connects to the same management network as eth0). For using out-of-the-box DHCP settings: Default hostname for the appliance (over eth0) is “ufm-appliance-[MAC ADDRESS]”. The MAC address for eth0 is available on the pull-tab and can be configured in the DHCP server. To use the remote management controller with DHCP, the free-range IP allocation must be enabled on the DHCP server. A static IP address for remote management interface can be configured via the CLI ("chassis remote-management ip" command)

Configuration via a serial port is only required if you want to use a static IP address and not the out-of-the-box DHCP setting for eth0. Otherwise, an IP is assigned by the DHCP server and you can login to the CLI over LAN.

NIC#1 Ethernet connector gets connected to Ethernet switches. This switch must be configured to 100M/1G auto-negotiation.

3.6 USB interface

The USB interface can be used to update the UFM.

There are five USB connectors. The USB is used for various actions:

- UFM configuration fetch/upload
- UFM db fetch/upload
- UFM counters.csv upload
- UFM license install
- UFM monitoring history backup

The USB is used in conjunction with the CLI for these operations. These connectors are USB 2.0 compliant.

3.7 System Cold Reset

When pressed this button will do a forced reboot and re-initialize the appliance. In general, for a graceful shutdown of the system (stopping all services, closing all files, flushing all caches etc.) use the CLI.

3.8 UFM®-SDN Appliance Installation and Operation

Installation and initialization of the UFM-SDN Appliance are straightforward processes, requiring attention to the normal mechanical, power, and thermal precautions for rack-mounted equipment.

3.8.1 Installation Safety Warnings

For Safety Warnings in French see Section C,“Avertissements de sécurité pour l'installation(French),” on page 37, for German see Section D,“Installation – Sicherheitshinweise(German),” on page 42, for Spanish see Section E,“Advertencias de seguridad de instalación(Spanish),” on page 46, for Russian see Section F,“Предупреждения по технике безопасности при установке(Russian),” on page 51, for Romanian see Section G,“Avertismente privind siguranţa la instalare (Romanian),” on page 56,for Chinese see Section H,“ 安裝安全性警告 (Chinese),” on page 61.

1. Installation Instructions

Read all installation instructions before connecting the equipment to the power source.

2. Over-temperature

This equipment should not be operated in an area with an ambient temperature exceeding the maximum recommended: 40°C (103°F). Moreover, to guarantee proper air flow, allow at least 8cm (3 inches) of clearance around the ventilation openings.

3. Stacking the Chassis

The chassis should not be stacked on any other equipment. If the chassis falls, it can cause bodily injury and equipment damage.

4. Redundant Power Supply Connection - Electrical Hazard

This product includes a blank cover over the space for the redundant power supply. Do not operate the product if the blank cover is not securely fastened or if it is removed.

5. During Lightning - Electrical Hazard

During periods of lightning activity, do not work on the equipment or connect or disconnect cables.

6. Copper Cable Connecting/Disconnecting

Copper cables are heavy and not flexible, as such they should be carefully attached to or detached from the connectors. Refer to the cable manufacturer for special warnings and instructions.

7. Rack Mounting and Servicing

When this product is mounted or serviced in a rack, special precautions must be taken to ensure that the system remains stable. In general you should fill the rack with equipment starting from the bottom to the top.

8. Equipment Installation

This equipment should be installed, replaced, or serviced only by trained and qualified personnel.

9. Equipment Disposal

Disposal of this equipment should be in accordance to all national laws and regulations.

10. Local and National Electrical Codes

This equipment should be installed in compliance with local and national electrical codes.

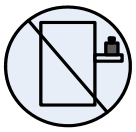
11. Battery Replacement

There is a risk of explosion should the battery be replaced with a battery of an incorrect type.
Dispose of used batteries according to the instructions.

12. UL Approved AC Power Cords

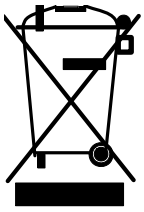
For North American power connection, select a power supply cord that is UL Listed and CSA Certified
3 - conductor, [16 AWG], terminated in a molded on plug cap rated at 125 V, [15 A], with a minimum length of 1.5m [six feet] but no longer than 4.5m
For European connection, select a power supply cord that is internationally harmonized and marked “<HAR>”,
3 - conductor, minimum 1.0 mm2 wire, rated at 300 V, with a PVC insulated jacket. The cord must have a molded on plug cap rated 250 V, 10 A.

13. Do Not Use the Appliance as a Shelf or Work Space



Caution: Slide/rail mounted equipment is not to be used as a shelf or a work space.

14. WEEE Directive



According to the WEEE Directive 2002/96/EC, all waste electrical and electronic equipment (EEE) should be collected separately and not disposed of with regular household waste.
Dispose of this product and all of its parts in a responsible and environmentally friendly way.

4 Mechanical Installation

The UFM®-SDN Appliance can be rack mounted and is designed for installation in a standard 19” rack. The power (rear) side of the appliance includes 2 hot-swap power supply modules.

The UFM-SDN Appliance accepts input voltages of 100 - 127 VAC and 200 - 240 VAC for all possible PS units.

The installer should use a rack capable of supporting the mechanical and environmental characteristics of a fully populated rack.

The rack mounting holes conform to the EIA-310 standard for 19-inch racks. Take precautions to guarantee proper ventilation in order to maintain good airflow at ambient temperature. Cable routing in particular should not impede the air exhaust from the chassis.

4.1 Package Contents and Installation

Before you install your new appliance, unpack the system and check to make sure that all the parts have been sent, check this against the parts list below. Check the parts for visible damage that may have occurred during shipping.

The appliance comes packed with the following items:

- 1 X – appliance
- 2 X – installation rails one right hand one left hand
- 2 X – power cables one for each PS unit – Type C13-C14

4.1.1 Installing the Appliance in the Rack

Premium Rail Kit

1. Place the ESD mat on the floor where you will be working and put on the ESD strap. Make sure the ESD strap is touching your skin and that the other end is connected to a verified ground.
2. Install the two rails into the rack. Make sure they are at the same level. Make sure they have the correct side to the top. The blue pins go into the rack holes.

Figure 15: Left-hand Rail Outside View Collapsed

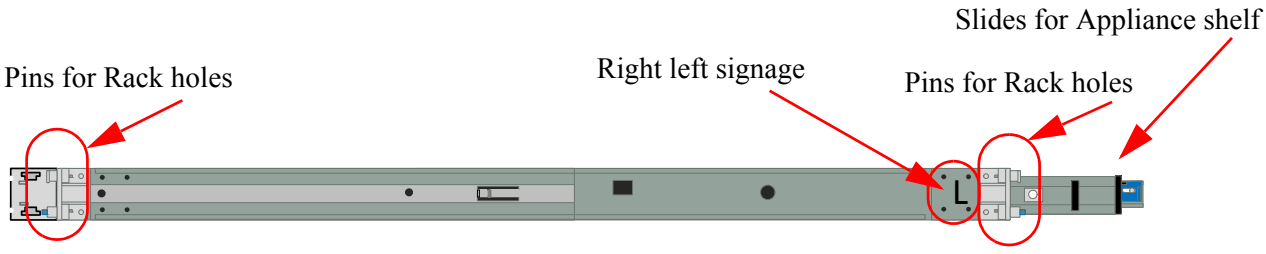


Figure 16: Left-hand Rail Outside View Extended

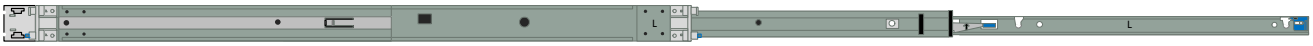
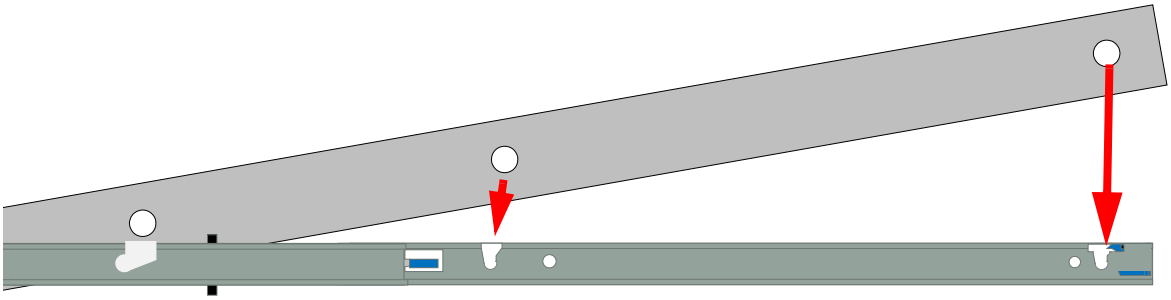


Figure 17: Left-hand Rail Inside View

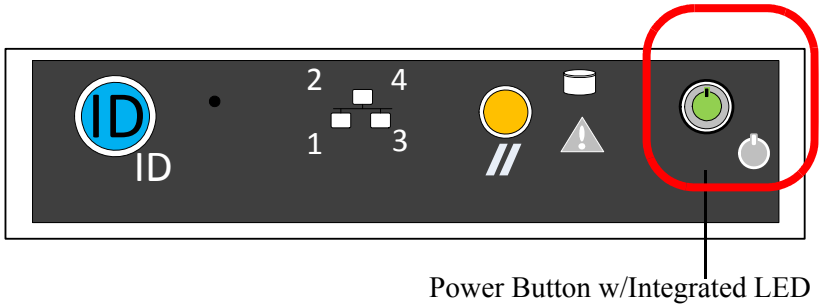
3. Slide the appliance into the rails as shown in the diagrams on the installation guide packed in the box.

Figure 18: Insert Appliance Into Rails



4. Ground the appliance.
5. Plug in the power cables.
6. Push the ON/OFF button to start.

Figure 19: Turn On



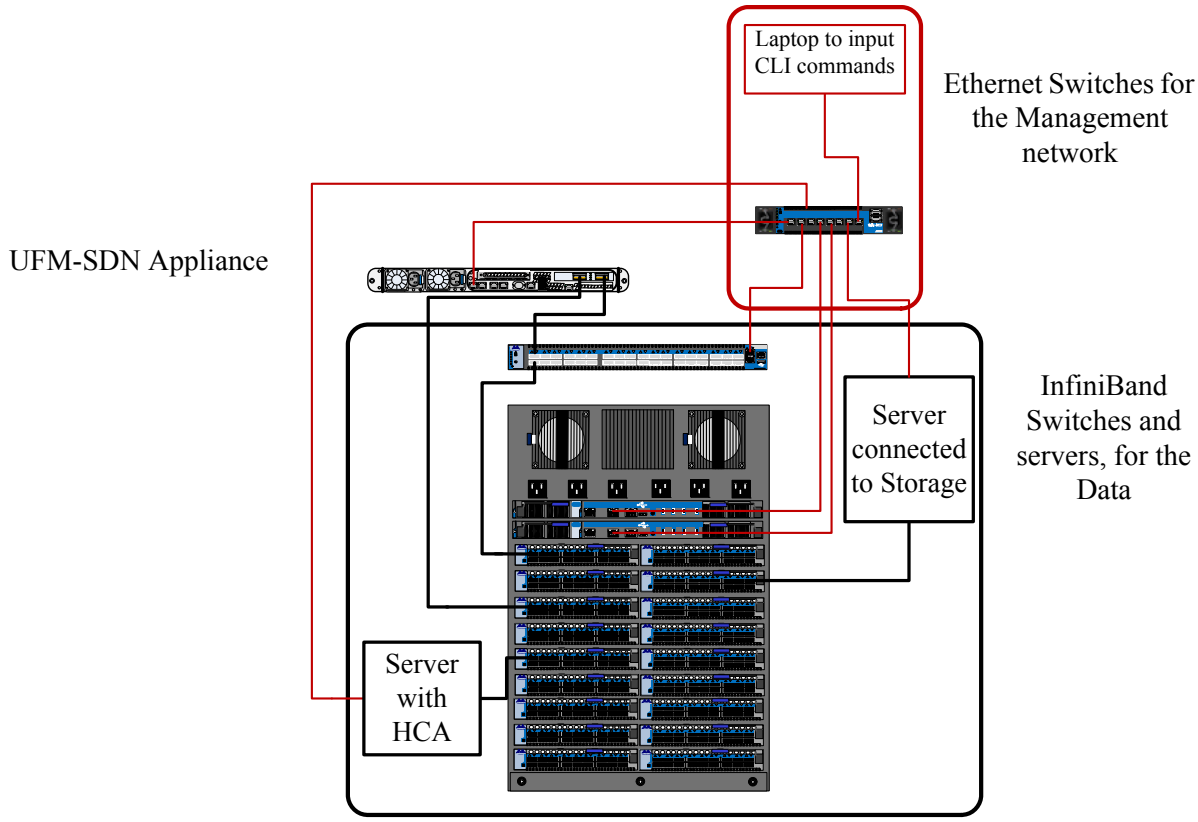
7. Check the Status LEDs and confirm that all of the LEDs show status lights consistent with normal operation.

Any amber status LEDs are cause for concern and must be dealt with immediately. It can take up to 5 minutes to boot up, during which time the status LED may indicate red.

4.2 Connecting UFM-SDN Appliance to your Network/Fabric

Unified Fabric Manager (UFM®) requires both InfiniBand and Ethernet (out-of band management) connectivity where eth0 should be connected to a management network switch and both InfiniBand ports should be connected to InfiniBand switches. They can be connected to the same switch, but Mellanox recommends connecting to two separate switches, to ensure SM connectivity to the fabric.

Figure 20: Connecting up the UFM-SDN Appliance


Laptop to input CLI commands
Ethernet Switches for the Management network
UFM-SDN Appliance
Server connected to Storage
InfiniBand Switches and servers, for the Data
Server with HCA

4.3 Grounding the Appliance

Check to determine if your local or national electrical codes require an external ground to all IT components. If so, connect a ground wire to one of the casing screws and connect the other end to a valid ground. If you choose to not use the ground screw, make sure that the rack is properly

grounded and that there is a valid ground connection between the chassis of the appliance and the rack. Test the ground using an Ohm meter.

Some national and/or local codes may require IT components to be bonded and externally grounded (not including the power cord ground). You must follow all national and local codes when installing this equipment.

4.4 Power Connections and Initial Power On

The UFM-SDN Appliance ships two power supply units. Each supply has a separate AC receptacle. The UFM-SDN Appliance accepts input voltages of 100 - 127 VAC and 200 - 240 VAC for all possible PS units. The power cords should be standard 3-wire AC power cords including a safety ground and rated for 15A or higher. The power supplies deliver 750W AC.

After inserting a power cable and turning on the appliance, confirm the green system status LED light is on.

Do not hot swap the power supply if your appliance has only one power supply. You must power down the system to replace the power supply unit when there is only one PS unit in the appliance.

Figure 21: Two Power Inlets - Electric Caution Notifications

CAUTION

Risk of electric shock and energy hazard. The two PS units are independent.

Disconnect all power supplies to ensure a powered down state inside of the UFM-SDN Appliance.

ACHTUNG

Gafahr des elektrischen Schocks. Entferrnen des Netzsteckers elnes Netzteils spannungsfrei. Um alle Einhieten spannungsfrei zu machen sind die Netzstecker aller Netzteile zu entfernen

ATTENTION

Risque de choc et de danger e'lectriques. Le de'branchment d'une seule alimentation stabilise'e ne de'branch uniquement qu'un module "Alimentation Stabilise'e". Pour isoler completement le module en cause, Il faut de'brancher toutes les alimentations stabilise'es.

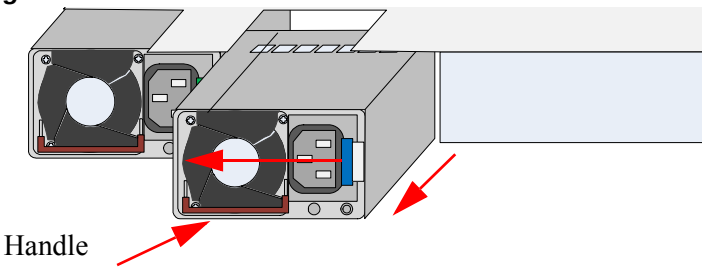
4.5 Extracting and Inserting the Power Supply Unit

The power supply is only hot-swappable if you have a redundant system with two power supplies installed. If you only have one power supply installed, before removing or replacing the power supply, you must first take the appliance out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.

The power supply can be replaced if it fails. To replace the power supply, follow these steps:

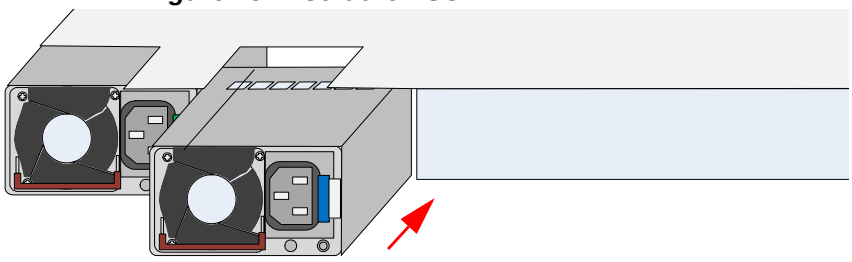
1. If a filler panel is installed, remove the filler panel.

Figure 22: Remove the PSU



2. If a power supply is installed, grab the handle with your thumb pointing toward the latch. Push the latch with your thumb towards the handle while you pull the power supply out of the appliance.

Figure 23: Insert the PSU



3. Insert the power supply module into the power supply cage and push all the way until it clicks into place.

Do not run the appliance with openings due to missing parts. This may cause overheating due to improper air flow.

4.6 Installing and Removing Hot-swap Hard Drive

This appliance comes with 4 3.5 inch SATA/SAS hot swap hard drive drawers. Two drive drawers come with 3.5 inch hard drives installed. These drives contain redundant UFM® software.

The drives work in RAID-1 level redundancy, also called "mirror" mode (Software RAID). This mode maintains an exact mirror of the information on one disk on the other disk. The RAID mechanism generates the data copy from the one drive to another.

When the both drives are in synch, the RAID state is Optimal. In case of malfunction in one of the drives, the system will continue working with the other drive but the system resiliency is affected and the HDD system becomes a single point of failure. It is important to get notification about the degraded RAID state and act to repair it as soon as possible. It is strongly recommended to enable e-mail notification for any RAID failure event as specified below:

In the CLI run the command

```
email notify event raid-state-change
```

The configuration should be done on every appliance separately. See UFM-SDN Appliance Command Reference guide for more information about email configuration.

RAID Failure Notification

In case one of the drives fails, the state of the RAID volume becomes “Degraded”, the system provides the following notification:

1. An amber light appears on the HDD drawer.
2. The user will receive an email notification that the RAID state has changed to “Degraded”.
3. The user will also receive a notification when he logs into the CLI.

RAID Failure Troubleshooting

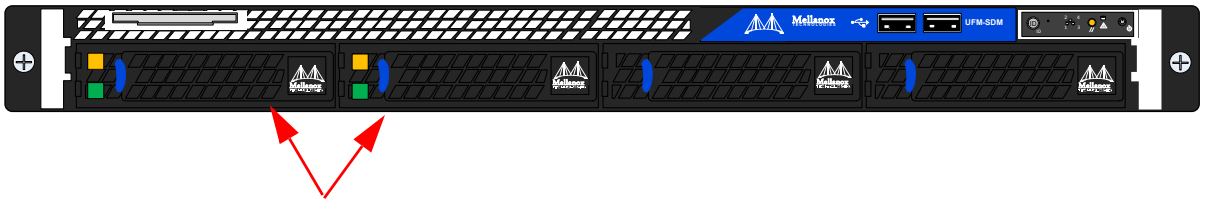
When the defective HDD is replaced, the newly inserted HDD enters to the Rebuild state (in which it the new HDD synchronizes with the existing HDD), this may take up to 48 hours to complete (during this time the RAID state is still “Degraded” and the amber light still blinks on the HDD drawer).

During this process and user can check the progress via the CLI command:

```
show chassis raid rebuild-state
```

When the rebuilding is done, the blinking amber light stops the green status light comes on, and RAID state becomes “Optimal”. A user will receive an e-mail notification that the state has changed to “Optimal”.

Figure 24: Hard Drives Drawers Pre-installed with Hard Drives

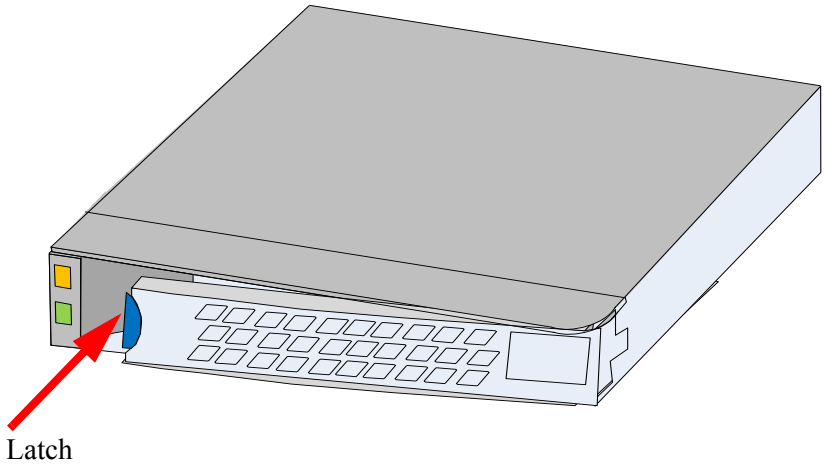


These two drive drawers are populated.

Empty drive drawers must be occupied by carriers with plastic drive blank provided to maintain proper system cooling.

4.7 Removing a Hard Disk Drive from a 3.5” Hard Drive Carrier

Figure 25: Remove HD

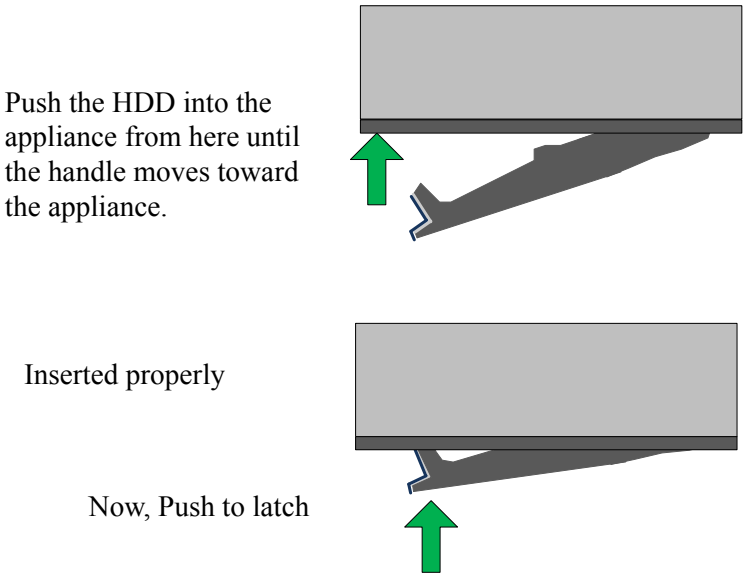


Never pull out a working hard drive while the appliance is turned on. You can safely pull out a faulty hard drive indicated by a solid amber light.

If one HDD physically fails, the appliance keeps working thanks to RAID mirroring. You can pull out and replace a faulty drive with a new replacement HDD, the replacement HDD will get synched with the working HDD, this takes up to 48 hours but doesn’t interrupt with appliance operation.

1. Verify the HDD is faulty by the solid amber light.
2. Remove the HDD by pressing the latch button and opening the lever.
3. Slide the HDD out.
4. Slide the replacement HDD in the slot. Continue to push in the HDD in until the latch starts to close.

Figure 26: Proper Insertion


Push the HDD into the appliance from here until the handle moves toward the appliance.
Inserted properly
Now, Push to latch

5. Close the latch.

The software RAID mechanism will identify that a new HDD was inserted and synchronize the data with the second HDD, this process might take up to 48 hours to complete.

4.8 Battery Replacement

Mellanox Technologies does not support battery replacement. Customer removal of the UFM® cover will void the warrantee. Only Remove the cover to comply with WEEE directives or to disassemble for environmentally approved disposal.

4.9 Supported Approved Cables

For a list of approved cables for this appliance see
http://www.mellanox.com/related-docs/user_manuals/Mellanox_approved_cables.pdf

4.10 Appliance Shut Down Procedure

To shut down the appliance run the command:

```
Reload halt [noconfirm]
```

The appliance cannot be restarted remotely!
To restart the appliance you must physically go to the appliance and unplug and plug in the power cord.

You can also shut down or cold reset the appliance remotely using the remote management.

4.11 Disassembly of the Appliance from the Rack

To disassemble the appliance from the rack:

1. Shut down the appliance.
2. Unplug and remove all connectors.
3. Unplug all power cords.
4. Remove the ground wire.
5. Unscrew the 2 center bolts from inside the handles.
6. Slide the appliance from the rack.
7. Remove the rail slides from the rack.

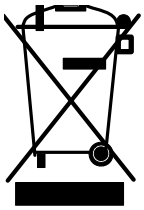
4.12 Remove the Battery

This procedure is only to be used when you will be disassembling this appliance before discarding, to comply with regulations regarding disposal of batteries.

Remove the cover.

Remove the battery and dispose of according to local and state and federal regulations.

4.13 Disposal



According to the WEEE Directive 2002/96/EC, all waste electrical and electronic equipment (EEE) should be collected separately and not disposed of with regular household waste.

Dispose of this product and all of its parts in a responsible and environmentally friendly way.

5 Troubleshooting

As soon as the appliance is plugged in make sure that the green power LEDs on the PS units are on. See “Basic Operation and Installation” on page 12 for the names and locations of the various LEDs.

Table 9 - TroubleShooting Issues and Resolutions

#	Issue	Resolution
1	System Status LED is RED	Unplug the appliance and call your Mellanox representative.
2	Power Supply Unit Status LED is not lit or is RED	1. Check that the power cable is plugged into a working outlet. 2. Check that the power cable has a voltage within the range of 100 - 240 volts AC. 3. Remove and reinstall the power cable. 4. Remove and reinstall the power supply unit.
3	The Power Button w/Integrated LED for the appliance shuts off	1. Check that the there is adequate ventilation. 2. Make sure that there is nothing blocking the front or rear of the chassis and that the fan modules and ventilation holes are not blocked (especially dust over the holes). 3. If you find dust blocking the holes it is recommended to clean the fan unit and remove the dust from the front and rear panels of the appliance using a vacuum cleaner.
4	The link LED for the Ethernet connector does not come on	1. Check that both ends of the cable are connected. 2. Check that the locks on the ends are secured. 3. Make sure that the latest firmware version is installed on all of the HCA cards and the appliance. 4. If media adapters are used, check that the all connections are good, tight, and secure.
5	The activity LEDs do not come on	1. Check that UFM has been started.
6	The appliance is off	1. Press the Power Button w/Integrated LED, If that does not work: 2. Unplug the appliance. 3. Wait 5 minutes. 4. Plug in the appliance, and press the Power Button w/Integrated LED. 5. If the appliance does not come on, check the power supplies. 6. If the appliance comes on, Use the UFM management software to determine the cause of the Shutdown. 7. Check the temperature. 8. Check the Fan status.
7	Hard drive LED is constant amber	HDD is faulty, replace according to instructions in Section 4.6.
8	Hard drive LED is blinking amber	RAID is rebuilding, wait for this operation to complete (might take up to 48 hours). Please refer to Section 2.1.1.4 and Section 4.6 for additional information.
9	The appliance is not working and is unresponsive	1. Reset the appliance. If resetting the appliance does not work: 2. Unplug the appliance. 3. Wait 5 minutes. 4. Plug in the appliance, and press the Power Button w/Integrated LED. 5. If the appliance does not come on, check the power supplies. 6. If the appliance comes on, use the UFM management software to determine the cause of the shutdown. 7. If the appliance continues to be unresponsive contact Mellanox Support.

Appendix A: UFM-SDN Appliance Specifications

Table 10 - UFM-SDN Appliance Specification Data

Physical		
Size	(1U)1.7”H x 17.2”W x 27.9”D 43.2mm 438 mm 709.37 mm	
Weight	14.1 kg 2 PS units	
Mounting	19” Rack mount	
SerDes Speeds /	10, 20, 40, or 56 Gb/s per port	
Air Flow/ Heat dissipation	Air Flow: 62 CFM	Maximum Heat dissipation: 750 Watt Max – 2560 BTU/hour
Power and Environmental		
Input Voltage / CPU	Input Voltage: 750W power supply module • 100 - 127 V at 50/60 Hz 7 A • 200 - 240 V at 50/60 Hz 3.5 A	CPU: 2 – Xeon E5-2630 CPUs
Temperature	Temperature: Operating: +10°C to +40°C with the maximum rate of change not to exceed 10°C per hour Non-operating:-40° to 70° C	
Shock and Vibration/ Humidity	Shock and Vibration: ETSI EN 300 019-2-2: 1999-09	Operating Humidity: 90%, non-condensing at 35°C
Storage		
Hard Drives	HDDs 2 x 1TB HDDs in SW RAID 1 (Mirrored)	
Protocol Support		
InfiniBand	Data Rate: Auto-Negotiation of (56Gb/s, 40Gb/s, 20 Gb/s, 10Gb/s)	
Data Rate	Data Rate: 56Gb/s	

Regulatory Compliance				
Safety \ EMC (Emissions)	Safety:	US/Canada: cTUVus EU: CE International: CB Russia: GOST-R Argentina: S-mark DoC	EMC (Emissions):	USA: FCC, Class A Canada: ICES-003, Class A EU: EN55022, Class A EU: EN55024, EU: EN61000-3-2, EU: EN61000-3-3, Japan: VCCI, Class A Australia / New-Zealand: C-Tick, AS/NZS CISPR 22 class A Korea: KCC Class A Taiwan: BCCI Class A
Environmental / Acoustic	Environmental: EU: IEC 60068-2-64: Random Vibration EU: IEC 60068-2-29: Shocks, Type I / II EU: IEC 60068-2-32: Fall Test		Acoustic: Sound power: 7.0 BA in operating conditions at typical office ambient temperature. (23 +/- 2 degrees C)	
Reliability, Availability and Serviceability Features				
Hot swapability / Redundancy	Hot-Swappable:1+1 Power Supplies N+N Redundant:			

A.1 Approved Cables

For a list of all approved cables see:

http://www.mellanox.com/related-docs/user_manuals/Mellanox_approved_cables.pdf

A.2 EMC Certifications

The list of approved certifications per appliance in different regions of the world is located on the Mellanox Website at:

http://www.mellanox.com/related-docs/user_manuals/Regulatory_and_Compliance_Guide.pdf

EMC statements are also in the Regulatory and Compliance Guide.

Appendix B: Field Replaceable Units

Table 11 - Replacement Parts

Ordering number	Description
MUA90-PF	Power Supply w/ PSU Side to Connector side airflow for Mellanox® UFM Appliance 1U VPI Server
MUA90-HD	Hard Drive for Mellanox® UFM®-SDN Appliance 1U VPI Server
MUA90-SKIT	Rack installation kit for Mellanox® UFM-SDN Appliance 1U VPI server standard depth racks

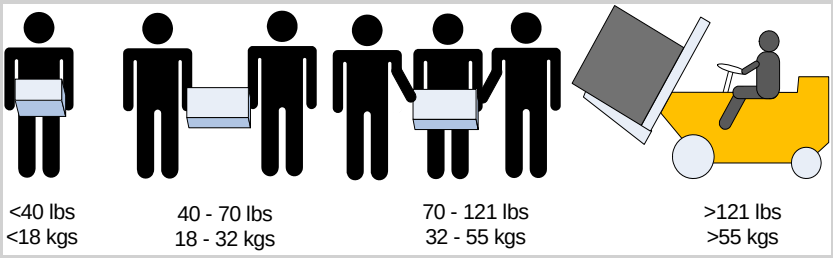
Appendix C: Avertissements de sécurité pour l'installation(French)

1. Instructions d'installation

Veuillez lire la totalité des instructions d'installation avant de relier l'équipement au secteur.

2. Blessures à cause du poids

Prévoyez assez de personnel pour soulever ce produit en toute sécurité.



3. Équipement lourd

Cet équipement est très lourd et doit être déplacé avec un système de levage mécanique pour éviter les blessures.

4. Installation dans un emplacement à accès limité

Cette unité doit être installée dans un emplacement à accès limité.

5. Danger d'électrocution

Danger d'électrocution !
Lorsque le module de ventilation est retiré, les broches d'alimentation sont exposées dans l'emplacement du module.
NE PAS insérer d'outils ou la main dans l'emplacement du module.

6. Surchauffe

Cet équipement ne doit pas être en service dans un local dont la température dépasse le maximum recommandé de 45°C (113°F). En outre et pour garantir une circulation d'air correcte, laisser un espace d'au moins 8 cm (3") autour des orifices de ventilation.

7. Châssis empilé sur d'autres équipements

Le châssis ne doit pas être empilé sur d'autres équipements. S'il tombe, il peut endommager l'équipement ou entraîner des blessures.

8. Connexion de l'alimentation redondante : danger d'électrocution

Ce produit est équipé d'une alimentation redondante ou d'un cache si elle est absente. Dans ce dernier cas, ne pas faire fonctionner le produit si le cache est retiré ou mal fixé.

9. Fusibles phase/neutre

Ce système dispose de fusibles phase/neutre. Débranchez tous les cordons d'alimentation avant d'ouvrir le capot ou de toucher tout élément à l'intérieur.

10. Plusieurs prises d'alimentation

Risque et danger d'électrocution.

Les alimentations sont toutes indépendantes.

Pour s'assurer que le commutateur est bien hors tension, débranchez toutes les alimentations.

11. En cas d'orage, danger d'électrocution

Pendant un orage, ne pas travailler sur l'équipement ni brancher ou débrancher des câbles.

12. Connexion et déconnexion du câble InfiniBand en cuivre

Les câbles InfiniBand en cuivre sont lourds et peu flexibles. Par conséquent, il faut procéder avec soin pour les brancher ou les débrancher des connecteurs. Consulter le fabricant du câble pour obtenir des instructions ou des avertissements spécifiques.

13. Montage en rack et maintenance

Lors du montage ou de la maintenance de ce produit dans un rack, il faut faire spécialement attention pour s'assurer que l'ensemble reste stable. En règle générale, le rack doit être rempli en commençant par le bas.

14. Installation de l'équipement

Cet équipement ne doit être installé, remplacé et maintenu que par un personnel formé et qualifié.

15. Mise au rebut de l'équipement

La mise au rebut de cet équipement doit se faire conformément à toutes les lois et réglementations nationales.

16. Codes électriques locaux et nationaux

Cet équipement doit être installé conformément aux codes électriques locaux et nationaux.

17. Codes d'installation

Cet appareil doit être installé conformément à la version la plus récente des codes électrique nationaux. En Amérique du Nord, l'équipement doit être installé en respectant les exigences de l'US National Electrical Code et du Code canadien de l'électricité.

18. Remplacement de la batterie

Avertissement : ne remplacer qu'avec une batterie UL, certifiée pour accepter un courant de charge anormal maximal supérieur ou égal à 4 mA.

Si la batterie n'est pas remplacée par un type correct, il y a un risque d'explosion.

Les batteries usagées doivent être mises au rebut conformément aux instructions.

19. Cordon d'alimentation UL Listed et certifié CSA

Pour le branchement électrique en Amérique du Nord, utiliser un cordon d'alimentation UL Listed et CSA Certified, à 3 conducteurs [calibre 16 AWG], avec une prise moulée 125 V [13 A], faisant au moins 1,5 m de long [six pieds] et au plus 4,5 m.

Pour le branchement électrique en Europe, utiliser un cordon d'alimentation au format international harmonisé (marqué <HAR>), à 3 conducteurs d'au moins 1 mm2 de section, 300 V, avec une gaine isolante en PVC. Le cordon doit avoir une prise moulée 250 V 10 A.

20. Courant de fuite élevé

Avertissement : courant de fuite élevé, une connexion à la terre est indispensable avant de brancher l'alimentation.

21. Information d'ajout de branchement à la terre (GND)

Avant de relier cet appareil au secteur, ses vis des bornes de la terre de protection doivent être reliées à la terre de l'installation électrique de l'immeuble. (Informations de branchement à la terre) :

L'installation électrique doit fournir une connexion à la terre, et un technicien de maintenance doit y relier l'équipement de façon permanente.

UN TECHNICIEN DE MAINTENANCE doit vérifier si la prise à laquelle sera branché l'équipement fournit une connexion à la terre. Si ce n'est pas le cas, le TECHNICIEN DE MAINTENANCE doit arranger l'installation d'un CONDUCTEUR DE MISE A LA TERRE, allant de la borne de mise à la terre jusqu'au conducteur de terre de l'immeuble. Cet équipement doit être installé dans une zone disposant de liaisons équipotentielles (comme un centre de télécommunications ou une salle informatique dédiée).

22. Codes d'installation

Cet appareil doit être installé conformément à la version la plus récente des codes électrique nationaux. En Amérique du Nord, l'équipement doit être installé en respectant les exigences de l'US National Electrical Code et du Code canadien de l'électricité.

23. Interconnexion des unités

Les câbles de connexion aux interfaces RS232 et Ethernet de l'appareil doivent être certifié UL de type DP-1 ou DP-2. (Note : en cas d'installation sur un circuit dont la puissance n'est pas limitée)

Protection contre les surintensités : le câblage de l'immeuble doit intégrer un dispositif certifié de protection contre les surintensités, calibré à 20 A et aisément accessible.

24. Exposition à des rayonnements dangereux

Attention : l'utilisation de commandes, l'ajustement ou la conduite de procédures autres que celles indiquées ici pourraient conduire à une exposition dangereuse à des rayonnements.

Pour les produits disposant de ports optiques

PRODUIT LASER DE CLASSE 1 et référence aux plus récentes normes relatives aux lasers : IEC 60 825-1:1993 + A1:1997 + A2:2001 et EN 60825-1:1994+A1:1996+ A2:2001

Pour les produits disposant de ports optiques

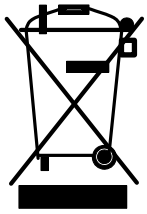
25. Armoire de protection appropriée

Une enceinte appropriée aux niveaux électrique, mécanique et incendie doit être fournie par le constructeur du produit fini ou par l'utilisateur.

26. Ne pas utiliser comme étagère ou plan de travail

Attention : un équipement coulissant ou monté sur rail ne doit pas servir d'étagère ni de plan de travail. Les rails ne sont pas destinés à faire coulisser l'unité hors du rack. Ils sont destinés à une installation permanente à l'emplacement final, pas pour l'entretien ni la maintenance.

27. Directive DEEE



Selon la Directive 2002/96/CE (DEEE), tous les déchets d'équipements électriques et électroniques (EEE) doivent être collectés séparément et ne pas être mis au rebut avec les déchets ménagers habituels.

Ce produit et toutes ses pièces doivent être mis au rebut d'une manière responsable, respectant l'environnement.

28. Restrictions concernant l'alimentation pour la Norvège

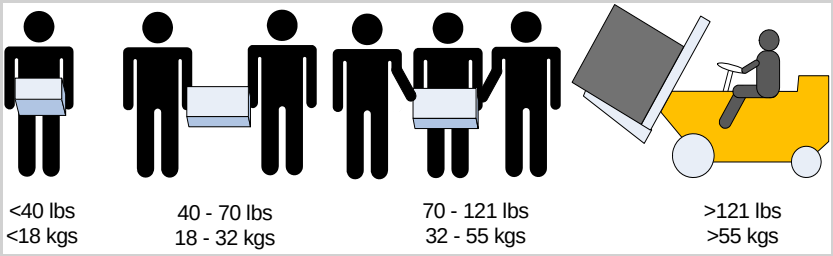
Appendix D: Installation – Sicherheitshinweise(German)

1. Installationsanleitungen

Lesen Sie alle Installationsanleitungen, bevor Sie das Gerät an die Stromversorgung anschließen.

2. Verletzungsgefahr wegen des Gewichts

Um das Produkt sicher anzuheben, genügend Personen einsetzen.



3. Schweres Gerät

Dieses Gerät ist sehr schwer und muss mit einem mechanischen Hebegerät verschoben werden, um Verletzungen zu vermeiden.

4. Installation an Bereich mit eingeschränktem Zugang

Diese Gerät ist für die Installation in einem Bereich mit beschränktem Zugang vorgesehen.

5. Stromschlagrisiko

Stromschlagrisiko!
Bei abgenommenem Ventilatormodul sind die Stromkontakte in der Modulvertiefung zugänglich.
Es dürfen KEINE Werkzeuge oder Körperteile in die Vertiefung des Ventilatormoduls gelangen.

6. Übertemperatur

Dieses Gerät sollte nicht in einem Bereich mit einer Umgebungstemperatur über der maximal empfohlenen Temperatur von 45°C (113°F) betrieben werden. Es ist ein Luftstrom von 200 LFM bei maximaler Umgebungstemperatur erforderlich. Außerdem sollten mindestens 8 cm (3 in.) Freiraum um die Belüftungsöffnungen sein, um einen einwandfreien Luftstrom zu gewährleisten.

7. Stapeln des Chassis

Das Chassis sollte nicht auf andere Geräte gestapelt werden. Wenn das Chassis herunterfällt, kann es zu Verletzungen und Beschädigungen an Geräten führen.

8. Redundanter Stromversorgungsanschluss - Elektrische Gefahr

9. Zweipolig/Neutrale Sicherung

Achtung:
Zweipolige bzw. Neutralleiter-Sicherung im Netzteil. Netzstecker ziehen, um sicherzustellen, daß keine Spannung am Gerät anliegt. Entfernen Sie alle Netzkabel vor dem Öffnen der Abdeckung dieses Produkts oder dem Berühren der Innenteile.

10. Mehrere Stromeingänge

Risiko eines Stromschlags und Stomgefahr.
Alle Stromversorgungseinheiten sind unabhängig.
Trennen Sie alle Stomversorgungen, um einen abgeschalteten Zustand im Inneren der Switch-Plattform sicherzustellen.

11. Bei Gewitter - Elektrische Gefahr

Arbeiten Sie während eines Gewitters und Blitzschlag nicht am Gerät, schließen Sie keine Kabel an oder ab.

12. Anschließen/Trennen von InfiniBand-Kupferkabel

InfiniBand-Kupferkabel sind schwer und nicht flexible. Deshalb müssen sie vorsichtig an die Anschlüsse angebracht bzw. davon getrennt werden. Lesen Sie die speziellen Warnungen und Anleitungen des Kabelherstellers.

13. Rack-Montage und Wartung

Wenn dieses Produkt in einem Rack montiert oder gewartet wird, sind besondere Vorsichtsmaßnahmen zu ergreifen, um die Stabilität des Systems zu gewährleisten. Im Allgemeinen sollten Sie das Gestell von unten nach oben mit Geräten füllen.

14. Geräteinstallation

Diese Gerät sollte nur von geschultem und qualifiziertem Personal installiert, ausgetauscht oder gewartet werden.

15. Geräteentsorgung

Die Entsorgung dieses Geräts sollte unter Beachtung aller nationalen Gesetze Bestimmungen erfolgen.

16. Regionale und nationale elektrische Bestimmungen

Dieses Gerät sollte unter Beachtung der regionalen und nationalen elektrischen Bestimmungen installiert werden.

17. Installationscodes

Dieses Gerät muss entsprechend der aktuellsten Version des National Electrical Code installiert weden. In Nodamerika muss das Gerät gemäß den geltenden Anforderungen des US National Electrical Code und des Canadian Electrical Code installiert werden.

18. Akkuaustausch

Warnung: Nur durch von UL anerkannten Akkus ersetzen, die für maximalen anormalen Ladestrom von nicht weniger als 4mA zertifiziert sind.

Es besteht Explosiionsgefahr, wenn der Akku durch einen Akku eines falschen Typs ersetzt wird.

Akkus gemäß den Anweisungen entsorgen.

19. UL- und CSA-zertifiziertes Netzkabel

Für Nordamerika Stromanschluss, wählen Sie ein Netzkabel, das UL-und CSA Certified

3 - Leiter, [18 AWG], mit einem angespritztem Stecker bewertet bei 125 V, [15], mit einer Mindestlänge von 1,5 m [Six Feet] aber nicht mehr als 4,5 m.

Für die europäischen Zusammenhang, wählen Sie ein Netzkabel, das international harmonisiert und der Aufschrift "<HAR>",

3 - Leiter, mindestens 0,75 mm2 Draht, bewertet mit 300 V, mit einem PVC-Mantel isoliert. Das Kabel muss eine angespritztem Stecker bewertet bei 250 V, 10 A. "

20. Hoher Ableitstrom

WARNUNG: Hohe Ableitstrom; Earth Verbindung, bevor Sie die Verbindung von wesentlicher Bedeutung werden.

21. Infomationen zum Erdungsanschluss

Bevor Sie dieses Gerät an das Stromnetz, die Schutzerde Terminal Schrauben dieses Gerät muss an den Schutzleiter in der Gebäudeinstallation.

22. Installationscodes

Dieses Gerät muss installiert sein, entsprechend auf die neueste Version des Landes National Electrical Code. Für Nordamerika, müssen in Übereinstimmung mit den geltenden Vorschriften in der US-amerikanischen National Electrical Code und dem Canadian Electrical Code.

23. Verbindung der Geräte untereinander

Kabel für den Anschluss an das Gerät RS232-und Ethernet-Schnittstellen müssen UL zertifiziert Typ DP-1 oder DP-2. (Hinweis-, wenn nicht mit Wohnsitz in LPS-Schaltung)

Überstromschutz: Eine leicht zugängliche Auflistung Abzweigleitung Überstrom-Schutzeinrichtung 20 A bewertet werden müssen in dem Gebäude Verkabelung.

24. Gefährliche Strahlung

Achtung – Nutzung von Steuerungen oder Einstellungen oder Ausführung von Prozeduren, die hier nicht spezifiziert sind, kann zu gefährlichem Strahlenkontakt führen..

Klasse 1 Laserprodukt und Referenzen zu den aktuellsten Lasterstandards :
ICE 60 825-1:1993 + A1:1997 + A2:2001 und EN 60825-1:1994+A1:1996+ A2:2001

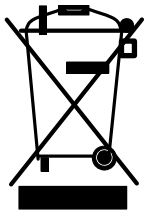
25. Geeignetes Gehäuse

Geeigneter elekrischer, mechanischer und Feuerschutz sind vom Hersteller des Endprodukts oder dem Endbenutzer bereitzustellen.

26. Switch nicht als Regal oder Arbeitsplatz nutzen

Achtung: Auf Schieber/Schienen montiertes Gerät ist nicht als Regal oder Arbeitsbereich zu nutzen. Die Schienen sind nicht dafür bestimmt, die Einheit aus dem Gestell weg zu ziehen. Sie sind nur für die permanente Installation an einem endgültigen Standort gedacht, nicht für Instandhaltung und Wartung.

27. WEEE-Direktive



Gemäß WEEE Directive 2002/96/EC müssen alle elektrischen und elektronischen Abfallgeräte (EEE) separat gesammelt und nichit mit normalem Haushaltsmüll ensorgt werden.

Dieses Produkt und alle seine Teile in verantwortungsvoller und umweltfreundlicher Art und Weise entsorgen.

28. Netzbeschränkungen für das Land Norwegen

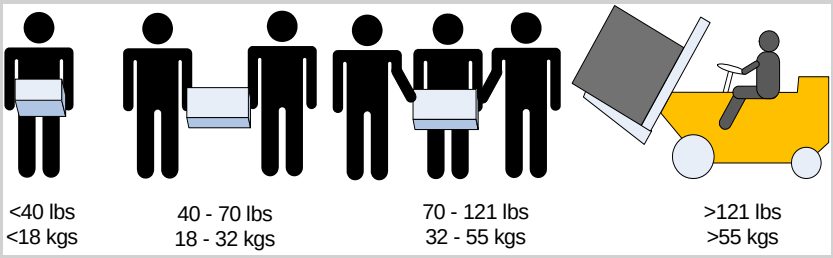
Appendix E: Advertencias de seguridad de instalación(Spanish)

1. Instrucciones de instalación

Antes de conectar el equipo a la fuente de alimentación, leer todas las instrucciones de instalación.

2. Lesión corporal a causa de peso

.Recurra a suficientes personas para levantar este producto sin



3. Equipos pesados

Dado que el equipo es muy pesado, se debe mover únicamente mediante un elevador mecánico, para evitar lesiones.

4. Instalación en lugares con acceso restringido

Esta unidad ha sido ideada para instalar en lugares de acceso restringido.

5. Riesgo de descarga eléctrica

¡Riesgo de descarga eléctrica!

Con el módulo del ventilador quitado, se obtiene acceso a las clavijas de alimentación desde dentro de la cavidad del módulo.

NO introducir herramientas ni partes del cuerpo en la cavidad del módulo del ventilador.

6. Sobretemperatura

No se debe utilizar el equipo en un área con una temperatura ambiente superior a la máxima recomendada: 45°C. Además, para garantizar una circulación de aire adecuada, se debe dejar como mínimo un espacio de 8 cm (3 pulgadas) alrededor de las aberturas de ventilación.

7. Apilamiento del chasis

Los chasis no se deben apilar sobre otros equipos. La caída del chasis podría causar lesiones corporales, así como daños al equipo.

8. Conexión redundante de fuente de alimentación: peligro de descarga

Este producto incluye una fuente de alimentación redundante o, en su lugar, una vacía. Si se dispone de una fuente de alimentación vacía, no utilizar el producto si su tapa está quitada o no está bien cerrada.

9. Fusible neutro o de polo doble

Dos fusibles, uno en el polo y otro en el neutro. Quitar los cables de corriente antes de abrir la tapa de este producto o tocar cualquier componente interno.

10. Tomas de alimentación múltiples

Riesgo de descarga eléctrica y peligro de corriente.

Todas las fuentes de alimentación son independientes.

Desconecte todas las fuentes de alimentación, para asegurar que no haya corriente alguna dentro de la plataforma de conmutación.

11. Al haber rayos: peligro de descarga

No utilizar el equipo ni conectar o desconectar cables durante períodos de actividad de rayos.

12. Cable de conexión y desconexión InfiniBand de cobre

Dado que los cables de cobre InfiniBand son pesados y no son flexibles, su conexión a los conectores y su desconexión se deben efectuar con mucho cuidado. Para ver advertencias o instrucciones especiales, consultar al fabricante del cable.

13. Montaje y mantenimiento del bastidor

Al instalar o realizar el mantenimiento de este aparato en un bastidor, es preciso adoptar precauciones especiales para garantizar que el sistema se mantenga estable. En general, en un bastidor, los equipos se deben instalar comenzando desde abajo hacia arriba.

14. Instalación del equipo

La instalación, el reemplazo y el mantenimiento de este equipo estarán a cargo únicamente de personal capacitado y competente.

15. Eliminación del equipo

La eliminación definitiva de este equipo se debe efectuar conforme a todas las leyes y reglamentaciones nacionales.

16. Códigos eléctricos locales y nacionales

Este equipo se debe instalar conforme a los códigos eléctricos locales y nacionales.

17. Códigos de instalación

Este dispositivo se debe instalar conforme a la versión más reciente de los códigos eléctricos nacionales del país en cuestión. En América del Norte, el equipo se debe instalar de acuerdo con las disposiciones vigentes del Código Eléctrico Nacional de los EE.UU. y del Código Eléctrico de Canadá.

18. Cambio de batería

II y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.

Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

19. Cable de alimentación homologado por UL y con certificación CSA

En conexiones de América del Norte, seleccionar un cable de alimentación homologado por UL y con certificación CSA de tres conductores, [16 AWG], terminado en un enchufe moldeado con capuchón de 125 voltios nominal, [13 A], con una longitud mínima de 1,5 metros, pero no más de 4,5 metros.

En conexiones europeas, seleccionar un cable de alimentación armonizado internacionalmente y marcado "<HAR>", de tres conductores, hilo de 1,0 mm2 como mínimo, 300 voltios nominal, con cobertura protectora aislante de PVC. El cable debe tener un enchufe moldeado con capuchón de 250 voltios nominal, 10 A.

20. Alta corriente de fuga

21. Agregar información de conexión a tierra (GND)

Antes de conectar el dispositivo a la línea de alimentación, los tornillos del terminal de la puesta a tierra de protección del dispositivo se deben conectar a la puesta a tierra de protección de la instalación del edificio.

(Información de conexión a tierra):

La instalación del edificio deberá prover un medio para la conexión con la puesta a tierra de protección y un técnico de servicio deberá conectar permanentemente el equipo a dicho medio de conexión.

Un TÉCNICO DE SERVICIO comprobará si la toma eléctrica de la que se suministrará corriente al equipo provee una conexión con la puesta a tierra de protección del edificio. De no ser así, el TÉCNICO DE SERVICIO se encargará de instalar un CONDUCTOR DE CONEXIÓN A TIERRA DE PROTECCIÓN, del terminal de puesta a tierra de protección separado al conductor de tierra de protección del edificio. El equipo se instalará en un área donde haya conexión equipotencial, como por ejemplo, un centro de telecomunicaciones o una sala de computadoras dedicada.

22. Códigos de instalación

Este dispositivo se debe instalar conforme a la versión más reciente de los códigos eléctricos nacionales del país en cuestión. En América del Norte, el equipo se debe instalar de acuerdo con las disposiciones vigentes del Código Eléctrico Nacional de los EE.UU. y del Código Eléctrico de Canadá.

23. Interconexión de unidades

Los cables para la conexión con las interfaces RS232 y Ethernet de la unidad deben estar homologados por UL tipo DP-1 o DP-2. (Nota: cuando residen en circuito no de tipo LPS)

Protección contra sobrecargas: Al cableado del edificio se debe incorporar un dispositivo de protección contra sobrecargas de circuito derivado, de fácil acceso, con una corriente nominal de 20 A.

24. Exposición a radiación peligrosa

Precaución: el uso de controles o ajustes o la realización de procedimientos distintos de los que aquí se especifican podrían causar exposición a niveles de radiación peligrosos.

PRODUCTO LÁSER DE CLASE 1 y referencia a las normas de láser más recientes: IEC 60825-1:2007/03 y EN 60825-1:2007

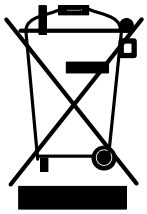
25. Recinto adecuado

El fabricante del producto final o el usuario final deberán suministrar un confinamiento adecuado para componentes eléctricos y mecánicos y contra incendio.

26. No utilizar el conmutador como estante ni como espacio de trabajo

Cuidado: Equipos montados en deslizadores o rieles no se deben utilizar como estantes ni como espacio de trabajo. La finalidad de los rieles no es deslizar la unidad hacia afuera del bastidor. Sirven solo para la instalación permanente en el lugar de destino final, no para fines de servicio o mantenimiento

27. Directiva WEEE



Conforme a la Directiva 2002/96/CE sobre RAEE, todos los residuos de equipos eléctricos y electrónicos (EEE) se deben recolectar por separado y no se deben eliminar junto con residuos domésticos.

Al deshacerse de este producto y de todas sus partes, hágalo de una manera responsable y respetuosa con el medio ambiente.

28. Limitaciones de potencia en Noruega

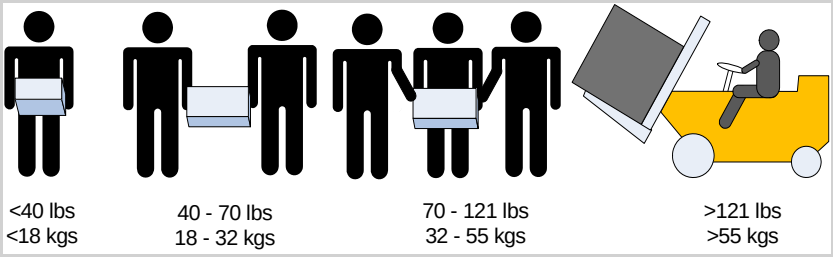
Appendix F: Предупреждения по технике безопасности при установке(Russian)

1. Инструкция по установке

Перед подключением оборудования к источнику питания следует ознакомиться с инструкцией по установке.

2. Травмы при переносе тяжелых предметов

Для поднятия этого изделия следует задействовать достаточное количество людей.



3. Тяжелое оборудование

Это очень тяжелое оборудование, поэтому его следует перемещать с помощью механического подъемника во избежание травм.

4. Опасность поражения электрическим током

Это устройство предназначено для установки в помещении с ограниченным доступом.

5. Опасность поражения электрическим током

Опасность поражения электрическим током!

Когда снят вентиляторный модуль, существует возможность повреждения контактов питания в его углублении.

НЕ вставлять инструменты или части тела в углубление вентиляторного модуля.

6. Перегрев

Не эксплуатировать это оборудование в помещении с температурой окружающей среды, превышающей максимально рекомендуемое значение: 45 °C (113 °F). Более того, для надлежащей вентиляции следует обеспечить зазор вокруг вентиляционных отверстий не менее 8 см (3 дюйма).

7. Установка шасси поверх другого оборудования

Не устанавливать шасси поверх другого оборудования. Падение шасси может привести к травмам и повреждению оборудования.

8. Опасность поражения электрическим током резервного источника питания

В этом изделии установлен резервный источник питания или модуль-заглушка. Если установлен модуль-заглушка, не эксплуатировать изделие со снятой или ненадежно закрепленной крышкой модуля-заглушки.

9. Двухполюсный предохранитель на фазном и нейтральном проводах

В этой системе установлен двухполюсный предохранитель на фазном и нейтральном проводах. Открывать кожух этого изделия или касаться внутренних деталей можно только после отсоединения всех шнуров питания.

10. Несколько источников питания

Опасность поражения электрическим током и опасные энергетические воздействия.

Блоки питания независимы друг от друга.

Чтобы обесточить все компоненты внутри платформы коммутации, следует отсоединить все блоки питания.

11. Опасность поражения электрическим током во время грозы

Во время грозы запрещается использовать оборудование и подключать или отключать кабели.

12. Подсоединение и отсоединение медных кабелей InfiniBand

Медные кабели InfiniBand тяжелые и негибкие, поэтому следует осторожно их подсоединять и отсоединять. За особыми предупреждениями и указаниями следует обратиться к производителю кабеля.

13. Установка или обслуживание в стойке

При установке или обслуживании этого изделия в стойке следует обеспечить устойчивость системы. Как правило, стойка заполняется оборудованием снизу вверх.

14. Установка оборудования

Устанавливать, заменять и/или обслуживать это оборудование должен только подготовленный и квалифицированный персонал.

15. Утилизация оборудования

Это оборудование утилизируется в соответствии с национальными законами и постановлениями.

16. Местные и национальные правила установки электрооборудования

Это оборудование устанавливается в соответствии с местными и национальными правилами установки электрооборудования.

17. Правила установки электрооборудования

Это устройство устанавливается в соответствии с последним изданием национальных правил установки электрооборудования. В Северной Америке оборудование устанавливается в соответствии с действующими требованиями Национальных правил эксплуатации и обслуживания электрических установок США и Канады.

18. Замена аккумулятора

Осторожно! Заменять только аккумулятором, одобренным организацией UL и рассчитанным на максимальный аномальный зарядный ток не менее 4 мА.

Существует риск взрыва при замене аккумулятора другим аккумулятором неправильного типа.

Отработавшие аккумуляторы утилизируются в соответствии с указаниями.

19. Шнур питания, включенный в номенклатуру UL и сертифицированный Канадской ассоциацией стандартизации (CSA)

Подключение к электропитанию в Северной Америке выполняется с помощью шнура питания, включенного в номенклатуру UL и сертифицированного Канадской ассоциацией стандартизации (CSA), 3-жильного, [16 AWG], длиной от 1,5 м [6 футов] до 4,5 м, с литой вилкой, рассчитанной на 125 В [13 А].

Подключение к электропитанию в Европе выполняется с помощью гармонизированного шнура питания с маркировкой <HAR>, 3-жильного, с сечением жилы не менее 1,0 мм², рассчитанного на номинальное напряжение 300 В, с ПВХ оболочкой. Шнур должен иметь литую вилку, рассчитанную на 250 В, 10 А.

20. Высокий ток утечки

Осторожно! Высокий ток утечки. Заземлить перед подключением к электропитанию.

21. Добавить информацию о подключении к заземлению

Перед подключением этого устройства к сети электропитания следует подсоединить винты заземляющего зажима устройства к защитному заземлению здания. (Информация о подключении к заземлению):

В здании должна быть предусмотрена возможность подключения к защитному заземлению, к которому техник должен стационарно подключить оборудование.

ТЕХНИК должен убедиться, что розетка, от которой будет питаться оборудование, подключена к защитному заземлению здания. Если розетка не подключена к защитному заземлению, ТЕХНИК должен организовать прокладку ПРОВОДА ЗАЩИТНОГО ЗАЗЕМЛЕНИЯ от отдельного зажима защитного заземления до провода защитного заземления в здании. Оборудование устанавливается в помещении с уравниванием потенциалов (например, в телекоммуникационном центре или специальном помещении для компьютеров).

22. Правила установки электрооборудования

Это устройство устанавливается в соответствии с последним изданием национальных правил установки электрооборудования. В Северной Америке оборудование устанавливается в соответствии с действующими требованиями Национальных правил эксплуатации и обслуживания электрических установок США и Канады.

23. Подсоединение устройств

Для подключения к разъемам RS232 и Ethernet используются кабели типа DP-1 или DP-2, сертифицированные организацией UL. (Примечание. При подключении к сети без ограниченного источника электропитания)

Максимальная токовая защита. В проводку здания в легкодоступном месте следует включить устройство защиты от перегрузки по току номиналом 20 А.

24. Опасное радиационное воздействие

Внимание! Выполнение не изложенных здесь регулировок, настроек и процедур может вызвать опасное радиационное воздействие.

ЛАЗЕРНОЕ ИЗДЕЛИЕ КЛАССА 1 и ссылка на последние стандарты по безопасности лазерных изделий IEC 60 825-1:1993 + A1:1997 + A2:2001 и EN 60825-1:1994 + A1:1996 + A2:2001.

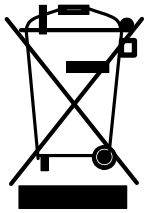
25. Соответствующий кожух

Производитель конечного изделия и/или конечный пользователь должны обеспечить соответствующий электрический, механический и противопожарный кожух.

26. Не использовать коммутатор как полку или рабочую

Внимание! Оборудование, установленное на направляющих, не должно использоваться как полка или рабочая поверхность. Направляющие не предназначены для удерживания устройства, выдвинутого из стойки. Они предназначены для стационарной установки только в конечном положении и не используются для обслуживания устройства.

27. Директива WEEE



В соответствии с Директивой 2002/96/EC (WEEE) отходы электрического и электронного оборудования должны собираться и утилизироваться отдельно от обычных бытовых отходов.

Следует утилизировать это изделие и все его части ответственным и экологически безопасным способом.

28. Ограничения для сетей электропитания Норвегии

This unit is intended for connection to a TN power system and an IT power system of Norway only.

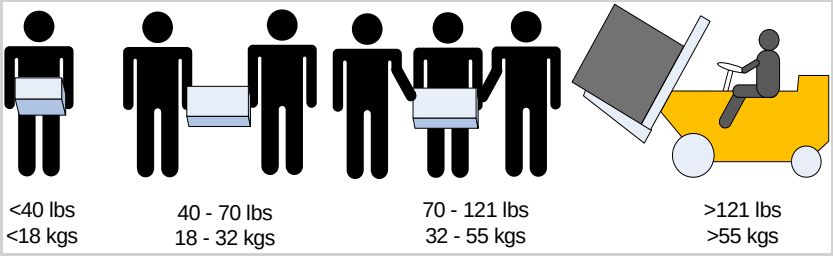
Appendix G: Avertismente privind siguranţa la instalare (Romanian)

1. Instrucţiuni de instalare

Citiţi toate instrucţiunile de instalare înainte de a conecta

2. Accidentare cauzată de greutate

Apelaţi la un număr suficient de persoane pentru a ridica în siguranţă acest produs.



3. Echipament greu

Acest echipament este foarte greu şi trebuie să fie mutat folosind un dispozitiv mecanic de ridicare pentru a evita producerea de leziuni.

4. Instalarea într-un loc cu acces limitat

Această unitate este destinată instalării într-un loc cu acces limitat.

5. Risc de şoc electric

Risc de şoc electric!

Odată ce modulul ventilator este îndepărtat, pinii electrici sunt accesibili în cavitatea modulului.

NU introduceţi instrumente sau părţi din corp în cavitatea modulului ventilator.

6. Temperatură în exces

Acest echipament nu trebuie să fie acţionat într-o zonă unde temperatura ambiantă depăşeşte valoarea maximă recomandată: 45°C (113°F). În plus, pentru a asigura un flux de aer adecvat, lăsaţi un spaţiu liber de cel puţin 8 cm (3 inchi) în jurul fantelor de ventilare.

7. Suprapunerea cadrului

Cadrul nu trebuie să fie suprapus peste niciun alt echipament. În cazul în care cadrul cade, poate cauza leziuni corporale şi deteriorări ale echipamentului.

8. Conexiunea la o sursă de alimentare electrică suplimentară - pericol electric

Acest produs include o sursă de alimentare suplimentară sau un spaţiu gol în locul acesteia. În cazul în care spaţiul pentru sursa de alimentare este gol, nu operaţi produsul când capacul orb este îndepărtat sau nu este fixat în mod sigur.

9. Siguranţă fuzibilă bipolară/neutră

Acest sistem este prevăzut cu siguranţă fuzibilă bipolară/neutră. Îndepărtaţi toate cordoanele de alimentare înainte de a deschide capacul acestui produs sau înainte de a atinge orice componente interne.

10. Multiple mufe electrice

Risc de şoc electric şi pericol electric.

Toate aparatele cu alimentare de la reţea sunt independente.

Deconectaţi toate sursele de alimentare cu energie pentru a asigura decuplarea în interiorul platformei de comutare.

11. În timpul descărcărilor electrice - pericol electric

În timpul perioadelor cu descărcări electrice luminoase, nu lucraţi cu echipamentul sau nu conectaţi sau deconectaţi cablurile.

12. Conectarea/deconectarea cablului din cupru InfiniBand

Cablurile InfiniBand din cupru sunt grele şi inflexibile, de aceea trebuie să fie ataşate sau detaşate de conectori cu grijă. Consultaţi producătorul de cabluri pentru avertismente/instrucţiuni speciale.

13. Montarea sau depanarea într-un rack

Când acest produs este montat sau depanat într-un rack, trebuie să fie luate măsuri de precauţie speciale pentru a se asigura că sistemul rămâne stabil. În general, trebuie să umpleţi rack-ul cu echipamente începând de jos în sus.

14. Instalarea echipamentului

Acest echipament trebuie să fie instalat, înlocuit şi/sau depanat numai de către personal instruit şi calificat.

15. Eliminarea echipamentului

Eliminarea acestui echipament trebuie să se realizeze în conformitate cu toate legile şi regulamentele naţionale.

16. Codurile electrice locale şi naţionale

Acest echipament trebuie să fie instalat conform codurilor electrice locale şi naţionale.

17. Codurile ed instalare

Acest dispozitiv trebuie să fie instalat în conformitate cu ultima versiune a codurilor electrice naţionale ale ţării în cauză. Pentru America de Nord, echipamentul trebuie să fie instalat conform cerințelor aplicabile din Codul electric național al SUA şi Codul electric canadian.

18. Înlocuirea bateriei

Avertisment: Înlocuiţi numai cu o baterie recunoscută UL, certificată pentru curent de încărcare anormal maxim de minimum 4 mA

Există risc de explozie în cazul în care bateria este înlocuită cu o baterie necorespunzătoare.

Eliminaţi bateriile folosite în conformitate cu instrucţiunile.

19. Cordon de alimentare electrică înregistrat UL şi certificat CSA

Pentru conectarea la o sursă de alimentare pentru America de Nord, selectaţi un cordon de alimentare care este înregistrat UL şi certificat CSA, cu 3 conductoare, [16 AWG], terminat cu o fişă turnată, cu putere nominală egală cu 125 V, [13 A], cu o lungime de minimum 1,5 m [şase picioare], dar nu mai lung de 4,5 m.

Pentru conectarea la o sursă de alimentare în Europa, selectaţi un cordon de alimentare care este armonizat la nivel internaţional şi marcat „<HAR>”, cu 3 conductoare, cu minimum 2 fire de 1,0 mm, cu putere nominală egală cu 300 V şi cu o manta izolantă din PVC. Cordonul de alimentare trebuie să fie prevăzut cu o fişă turnată cu putere nominală egală cu 250 V, 10 A.

20. Curent de scurgere de înaltă frecvenţă

Avertisment: Curent de scurgere de înaltă frecvenţă; Împământarea este esenţială înainte de a conecta sursa de alimentare.

21. Adăugarea de informaţii privind legarea la pământ

Înainte de a conecta acest dispozitiv la o linie electrică de energie, şuruburile bornelor de protecţie de legare la pământ ale acestui dispozitiv trebuie să fie conectate la priza de pământ de protecţie din instalaţia clădirii. (Informaţii privind legarea la pământ):

Instalaţia clădirii va asigura un mijloc de conectare la priza de pământ, iar echipamentul va fi în mod permanent conectat la priza de pământ de un agent de întreţinere.

UN AGENT DE ÎNTREŢINERE va verifica dacă priza - borna de ieşire prin intermediul căreia va fi alimentat echipamentul cu energie electrică asigură o conexiune la priza de pământ a clădirii. În caz contrar, AGENTUL DE ÎNTREŢINERE va dispune instalarea unui CONDUCTOR DE PROTECŢIE DE LEGARE LA PĂMÂNT de la borna separată de protecţie de legare la pământ la cablul de protecţie de legare la pământ al clădirii. Echipamentul va fi instalat într-o zonă unde există legături echipotenţiale (precum un centru de telecomunicaţii sau o cameră a computerelor dedicată).

22. Codurile de instalare

Acest dispozitiv trebuie să fie instalat în conformitate cu ultima versiune a codurilor electrice naţionale ale ţării în cauză. Pentru America de Nord, echipamentul trebuie să fie instalat conform cerinţelor aplicabile din Codul electric naţional al SUA şi Codul electric canadian.

23. Interconectarea unităţilor

Cablurile pentru conectarea la unitatea RS232 şi la interfeţele Ethernet trebuie să fie de tipul DP-1 sau DP-2 certificate UL. (Notă- când se regăsesc într-un circuit non-LPS)

Protecţie la supracurent: Un dispozitiv de protecţie la supracurent, înregistrat în circuitul de ramificare, uşor accesibil şi cu o putere nominală egală cu 20 A trebuie să fie integrat în cablajul clădirii.

24. Expunerea la radiaţii periculoase

Atenţie – Utilizarea elementelor de comandă sau ajustarea sau executarea altor proceduri decât a celor indicate în acest document poate avea ca rezultat expunerea la radiaţii periculoase.

PRODUS LASER CLASA 1 şi referire la cele mai recente standarde pentru laser IEC 60 825-1:1993 + A1:1997 + A2:2001 şi EN 60825-1:1994+A1:1996+ A2:2001

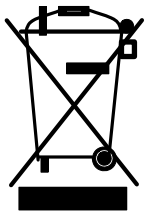
25. Carter adecvat

Un carter electric, mecanic şi ignifug adecvat va fi furnizat de fabricantul produsului final şi/sau utilizatorul final.

26. Nu utilizaţi comutatorul ca raft sau spaţiu de lucru

Atenţie: Echipamentul montat pe o linie de alunecare/şină nu va fi utilizat ca raft sau spaţiu de lucru. Scopul şinelor nu este de a glisa unitatea de pe rack. Acestea sunt destinate instalării permanente numai la punctul final de oprire şi nu vor fi folosite pentru depanare şi întreţinere

27. Directiva DEEE



În conformitate cu Directiva DEEE 2002/96/CE, toate deşeurile de echipamente electrice şi electronice (EEE) trebuie colectate separat şi nu trebuie eliminate împreună cu deşeurile menajere obişnuite.

Eliminaţi acest produs şi toate componentele sale în mod responsabil şi ecologic.

28. Restricţii electrice pentru Norvegia

Appendix H: 安裝安全性警告 (Chinese)

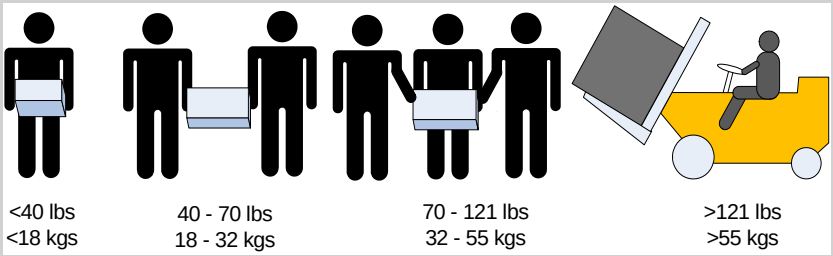
警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

1. **安裝指示**

本設備附有備援電源供應器或在適當位置配有空白蓋板。

2. **因重量導致的人身受傷**

為了安全起見，請安排足夠的人員以合力抬起本產品。



3. **重設備**

本設備極重，應使用機械式起重機來搬移，以避免人員受傷。

4. **安裝於進出管制區域**

本設備設計安裝於進出管制區域。

5. **有觸電的危險**

有觸電的危險！
拆除風扇模組後，即可接觸到模組空腔內的電源針腳。
請勿將工具或機身零件插入到風扇模組空腔內。

6. **溫度過高**

本設備不應在超過所建議的最高環境溫度的區域中運作：45°C (113°F)。此外，為了保證氣流的流通正常，請在通風口旁保留至少 8 公分 (3 英吋) 的間距。

7. 堆疊機箱

機箱不應堆疊在任何其他設備上。如果機箱掉落，可能造成人員受傷與設備損壞。

8. 複式電源連接時的電擊危險

本設備附有備援電源供應器或在適當位置配有空白蓋板。如果是電源供應器空白蓋板，在空白蓋板已取下或未牢牢固訂的情況下，請勿操作本產品。

9. 雙極 / 中性保險絲

本系統具有雙極 / 中性保險絲。請拔掉所有電源線後，再打開本產品的蓋板或碰觸任何內部零件。

10. 多電源輸入座

電擊與能源危害的危險。
所有 PSU 均各自獨立。
將所有電源供應器斷電，確保交換器平台內部在電源關閉狀態。

11. 閃電時的電擊危險

在閃電期間，不要使用本設備或連接或拔下纜線。

12. InfiniBand 銅纜連接 / 拔下

InfiniBand 銅纜很重且沒有彈性，因此必須小心裝在連接器上或自連接器上拔下。如需相關的特殊警告 / 指示，請洽詢纜線製造商。

13. 機架安裝與維修

此產品已安裝在機架中或在機架中維修時，必須採取特定預防措施以確保系統維持穩定。一般您應該將設備從底部到頂端放滿機架。

14. 設備安裝

本設備僅限由經過訓練與 / 或合格的人員安裝、更換或維修。

15. 設備棄置

棄置本設備應遵照所有國內法規。

16. 當地與國家電氣法規

請遵照當地與國家電氣法規安裝本設備。

17. 安裝法規

請務必遵循最新版的國家電氣法規，安裝本設備。在北美地區，請務必遵循美國國家電工法規和加拿大電工法規中的適用規定，安裝本設備。

18. 更換電池

警告：只能以 UL 認可電池，且取得最大異常充電電流低於 4mA 認證的電池進行更換。
若更換錯誤類型的電池，會有爆炸的危險。
請依據指示棄置廢電池。

19. UL 列名和 CSA 認證電源線

北美地區在接上電源時，請選用獲得 UL 列名和 CSA 認證、三個導體、[16 AWG] 附成型插頭，額定值為 125 V、[13 A]，長度至少 1.5 公尺 [六英尺]，但不超過 4.5 公尺的電源線。
歐洲地區在接上電源時，請選用國際協調式且標示有 <HAR> 字樣、三個導體、標稱截面至少 1.0 平方公厘，額定值為 300 V，採用 PVC 絕緣的電源線。電源線需有成型插頭，額定值為 250 V, 10 A。

20. 高漏電流

21. 新增 GND 連線資訊

須連接至大樓安裝中的保護地線。(GND 連線資訊) :
大樓安裝應提供連接保護地線的方式；設備一律只能由維修人員連接至地線。
維修人員應檢查插座 (供電給設備的插座) 是否提供連接大樓保護地線的方式。如果沒有，維修人員應安排從獨立保護地線端子，將保護接地導體安裝至大樓的保護地線。設備應安裝於有等電位聯結的區域 (例如，電信中心或專用電腦室)。

22. 安裝法規

請務必遵循最新版的國家電氣法規，安裝本設備。在北美地區，請務必遵循美國國家電工法規和加拿大電工法規中的適用規定，安裝本設備。

23. 互連設備

連接至 RS232 設備和乙太網路介面的纜線必須是 UL 認證類型 DP-1 或 DP-2。(請注意位於非 LPS 電路時)
過電流保護：準備好使用的列名分支電路過電流保護裝置最大額定值 20 A 必須整合在配線中。

24. 危險的放射線暴露

小心 – 使用非本手冊指定的控制、調整或執行程序可能導致曝露在危險的放射線下。
配備光纜連接埠的產品

CLASS 1 雷射產品，並參照最新的雷射標準 IEC 60 825-1:1993 + A1:1997 + A2:2001 與 EN 60825-1:1994+A1:1996+ A2:2001
配備光纜連接埠的產品

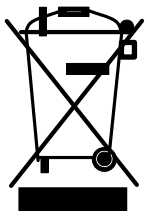
25. 適當外殼

終端產品廠商或終端使用者應提供適合的電氣、機械和防火外殼。

26. 切換開關不可用作機架或工作空間

小心：滑軌 / 導軌安裝設備不可用作機架或工作空間。導軌不適用於將設備滑出機架使用。僅限永久安裝在最後安置區域時使用，不可用於維修和保養。

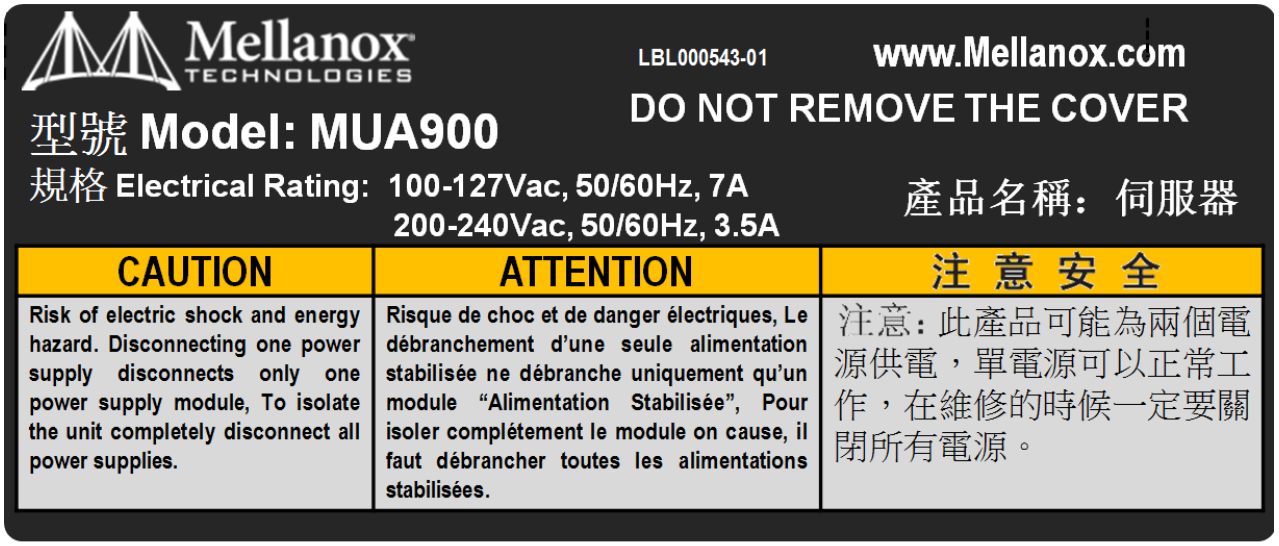
27. WEEE 指令



根據 WEEE 指令 2002/96/EC，所有廢棄的電氣與電子設備 (EEE)，應分開集中，而且不應與一般家庭廢棄物一起棄置。
請以負責和環保的方式棄置本產品及其所有零件。

28. 挪威國家電源限制

本設備僅限連接至挪威的 TN 電源系統和 IT 電源系統。


Mellanox
TECHNOLOGIES
LBL000543-01
www.Mellanox.com
DO NOT REMOVE THE COVER
型號 Model: MUA900
規格 Electrical Rating: 100-127Vac, 50/60Hz, 7A
200-240Vac, 50/60Hz, 3.5A
產品名稱：伺服器
CAUTION
Risk of electric shock and energy hazard. Disconnecting one power supply disconnects only one power supply module, To isolate the unit completely disconnect all power supplies.
ATTENTION
Risque de choc et de danger électriques, Le débranchement d'une seule alimentation stabilisée ne débranche uniquement qu'un module "Alimentation Stabilisée", Pour isoler complétement le module on cause, il faut débrancher toutes les alimentations stabilisées.
注 意 安 全
注意：此產品可能為兩個電源供電，單電源可以正常工作，在維修的時候一定要關閉所有電源。